

Broaden the Tax Base

Inc..

tories Inc ...

has. C., 52

Corp. . 55

on, Inc. 8

The broader the tax base, the sounder the system of taxation. Tax revenues should not be subject to the present serious fluctuations running abnormally high in prosperous years and correspondingly low during depressions. That is a weakness of our present system which depends largely upon an income tax too narrowly applied. Only two per cent of the population pay income taxes. With more people directly contributing to the support of Government, general interest in expenditures of Government will increase and this will tend to promote efficiency and help to curtail extravagance.

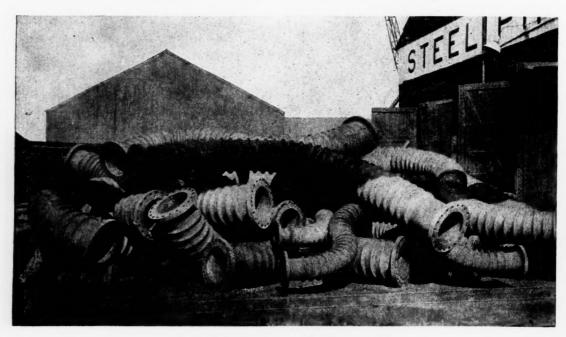
"Soak the Rich," echoes the demands of Communists heard in the halls of Congress. But the rich goose is no longer able to lay golden tax eggs. Since 1929, incomes have dropped so low that this source of revenue will not suffice. Nevertheless the Government budget must be balanced and the obvious necessary way in that direction is to do what private business has had to do—cut expenses drastically. In addressing itself to this problem, Congress is showing commendable zeal, but there should be no doubt nor hesitation in carrying out the wishes of the country manifested on every side to cut out superfluous bureaus and stop overlapping. In the new order coming about, efficiency should be the goal. A reduction of salaries is important, but it is only a step. A close scrutiny of the work of government throughout is a necessity at the present time.

Under present circumstances, it is almost unthinkable that there are those willing to sponsor a huge appropriation for a bonus, which it is estimated will require \$2,000,000,000 additional.

"PARTICULAR PIPING"

CORRUGATED PIPE BENDS

(Aiton Process)



Corrugated Piping for New 73,000-Ton Cunarder

E take pleasure in announcing that Aiton & Company, Ltd., of Derby, England, the designers and developers of the celebrated "Aiton Process" Corrugated Pipe and Bends, have selected The Standard Piping & Fitting Company as the Sole Licensee for the production of this Corrugated Pipe and Bends in the United States.

Preparations are now being made to install the equipment necessary to properly Corrugate and Bend Corrugated Pipe in sizes from 2" to 24", and the production of 100% American Made "Aiton Process" Bends is expected by about July 1st, 1932.

Our Engineers and Mechanics are now in England at the Aiton Plant, getting all of the Engineering and Mechanical detail that is necessary to insure production of an American product that will parallel the high quality output of the English developers of this interesting item.

Corrugations when properly applied in Plain Tubing provide several very marked advantages over Plain Tubing, the most important of which is Flexibility.

Corrugated Pipe and Bends are especially suited for restricted spaces and where Vibration and Weaving are a factor.

Let us have the pleasure of showing you how Corrugated Pipe and Bends will correct your existing troubles and effect some savings.

STANDARD PIPING & FITTING COMPANY

Sole Licensee for "THE AITON PROCESS" in the United States

49TH & GRAY'S AVENUE

PHILADELPHIA, PA.

Entered as second-class matter at the Postoffice, Baltimore, Md., under the act of March 3, 1879. Vol. CI, No 13, weekly.

cord

-that doesn't destroy the subgrade!

Watch a Northwest on road world

It maneuvers easily and quickly to new positions without tearing up the subgrade. Turning with full power on both crawlers eliminates the undercutting of the grade surface that is always present with steering methods involving the delivery of power to only one crawler. A Northwest turns swiftly, easily, without stress or strain, and only a minimum of destruction to the subgrade. Grading proceeds at a new speed and hand trimming is greatly reduced. Another reason why the leading highway contractors indorse Northwest.

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Offers Two Shovel Types



Write for literature on Koehring Extra Yardage Shovels in 1 and 11/4 yard sizes and Koehring Standard Shovels in 3/4, 1, 11/4 and 11/2 yard sizes.

Both types are quickly convertible to clamshell, crane, dragline or pull shovel.

A 6508-I



Standard Line and Extra Yardage **Extra Profit Line!**

PERATING speed and power of the ordinary shovel - when only one speed is available-must be based on the power required for the hardest digging. Therefore when excavating ordinary earth or easier materials, the owner of a one-speed shovel is needlessly penalized in output.

Koehring extra yardage shovels are provided with speed change gearing. Just shift into "high" when digging is easier; get the extra profit of extra yardage

speed, - 25% faster than one-speed shovels. But when you hit tough digging, go into "low". Then the extra speed is transformed into extra power at the dipper, and you get fuller dipper loads.

KOEHRING Standard Heavy Duty machines, with oversize engines are exceptionally rugged. Dipper loads are heaped to overflowing even in tough digging.

They provide an unusual value where high speed cannot be used or the higher first cost of extra yardage shovels is not justified.

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March

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Record

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The Outstanding Values in Trucks Today



This International Model A-6, 170-inch wheelbase, with a special body, winch, and low-pressure pump, is operated by the Pennsylvania Railroad.

THEN you are in the market for motor trucks be sure to investigate the complete modern line of International Trucks. There is a capacity and wheelbase for every type of hauling, at attractive prices that make Internationals the outstanding truck investment today. The list of speed and heavyduty models at the right shows the wide range from which you can select those best suited for your work.

International Trucks are soundly designed and engineered for long truck life and efficient operation at low cost. They are built strong, inside and out, to stand up under the most difficult conditions. Alloy and heat-treated steels, and ball and roller bearings are used at many points to reduce wear and friction to a minimum. Powerful but economical engines provide abundant power and speed.

Service . . . so vital in truck operation . . . is available everywhere on International Trucks. There are 183 Company-owned branches in the United States and Canada that keep Internationals on the job. The nearest branch will be glad to demonstrate any model.

McCORMICK-DEERING INDUSTRIAL POWER

McCormick-Deering Power is cutting costs on material handling and a variety of other jobs in every branch of industry. It works alone or in combination with many types of equipment. The McCormick-Deering Industrial

The McCormick-Deering Ind Tractor is built in two sizes—Model 30, shown at the right, has a 40-h.p. engine; Model 20 is similar in design and has a 25-h.p. engine. There are also two McCormick-Deering Power Units for stationary power work—Model 300, developing 40 h.p., and Model 200, developing 25-h.p. Model T-20 TracTracTor is available where crawlers are needed for traction.



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3/4-ton Speed Truck

Model A-1. 4-cylinder engine, 358" bore x 4½" stroke. 4 speeds forward, 1 reverse. Wheelbase, 136". Spiral bevel drive.

"Six-Speed Special"

Model B-2. $1\frac{1}{2}$ -ton. 4-cylinder engine, $3\frac{5}{8}$ " bore x $4\frac{1}{2}$ " stroke. 6 speeds forward, 2 reverse Wheelbase, 136". Spiralbevel drive (with 2 speeds).

1½-ton Speed Trucks

Model A-2-4-cylinder engine, 358" bore x 412" stroke.

Model A-3-6-cylinder engine, 314" bore x 412" stroke.

Wheelbases for both, 136" and 160". Model AL-3-6-cylinder engine, 314"

bore x 4½" stroke. Wheelbases, 138", 152", and 164".

All have 4 speeds forward, 1 reverse, and spiral-bevel drive.

2-ton Speed Truck

Model A-4. 6-cylinder engine, 35%" bore x 4½" stroke. 5 speeds forward, 1 reverse. Wheelbases, 145", 156", 170", and 185". Spiral-bevel drive.

3-ton Speed Trucks

Model A-5 (spiral-bevel drive) and Model A-6 (double-reduction drive). 6-cylinder engines, 35% bore x 4½ stroke. 5 speeds forward, 1 reverse. Wheelbases, 140", 156", 170", 190", and 210".

2½ to 3-ton Heavy-Duty Truck

Model W-1. 4-cylinder engine, $4^14''$ bore x $5^12''$ stroke. 5 speeds forward, 2 reverse. Wheelbases, 130", 148", 170", 185", and 200". Double-reduction drive

3½-ton Heavy-Duty Truck

Model W-2. 4-cylinder engine, $4^12''$ bore x $5^12''$ stroke. 5 speeds forward, 2 reverse. Wheelbases, 130", 148", 170", 185", and 200". Double-reduction drive

3½ to 5-ton Heavy-Duty Truck

Model W-3. 4-cylinder engine, 4^3_4 " bore x 5^1_2 " stroke. 5 speeds forward, 2 reverse. Wheelbases, 144", 160", 185", 210", and 235". Double-reduction drive-

5-ton Heavy-Duty Trucks

Model A-7-6-cylinder engine, 412" bore

Model A-8-6-cylinder engine, 5" bore x

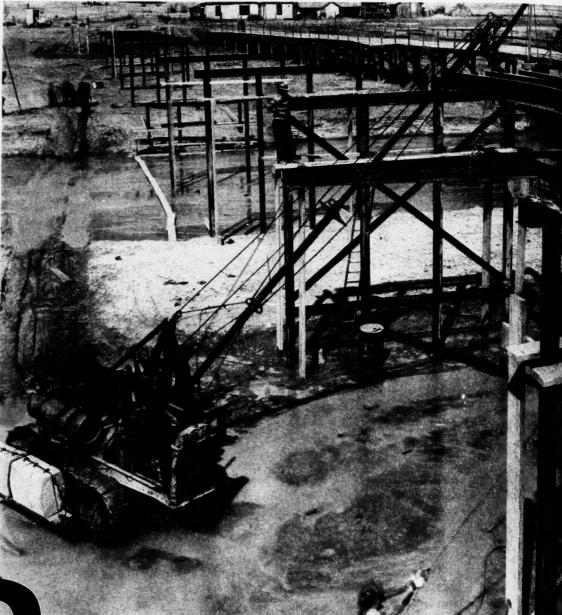
Both have 5 speeds forward, 2 reverse, and double-reduction drives. Wheelbases, 160", 180", 200", and 225".

The 11/2-ton, 4-speed Model A-2 Now reduced to

for the 136-inch Wheelbase

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(There's a "Caterpillar" Dealer Near You)

Prices—fo h Peoria Illinois

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TRACTOR

ridges, too

A "CATERPILLAR" Sixty, equipped with winch and boom,

did most of the work in building this bridge near Boulder, Colorado. It took 19 days to finish the job—the "Caterpillar" drove the piles and hoisted the last beam into place. Road builders are discovering that "Caterpillar" track-type Tractors "go anywhere and do most everything!" s Record

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There are many types of wire rope and a wide variety of wire rope constructions. These have been developed over a long period of years to satisfy diverse requirements.

In the case of Roebling, many years have been spent in the development and improvement of rope design and production—in searching out the truth regarding wire rope performance—in an organized endeavor to give the rope user more for his rope dollar. As a part of this program, every type and construction of wire rope has been and constantly is being exhaustively studied in laboratory and field to determine its qualities and proper application, and to seek improvements.

Out of this effort has come, for one thing, the conviction that no one type or construction of wire rope is suitable for all purposes—that there is no wire rope "cure-all".

You will find, therefore, that Roebling does not favor any one kind of rope. It endeavors to, and because of its complete line, is free to recommend exactly the rope that most economically will meet the user's needs.

JOHN A. ROEBLING'S SONS COMPANY, TRENTON, N. J. Wire-Wire Rope-Copper & Insulated Wires & Cables - Welding Wire-Flat Wire-Wire Cloth & Wire Netting Branches in Principal Cities Export Dept.—New York, N. Y.

A plain statement about Wire Rope Economy

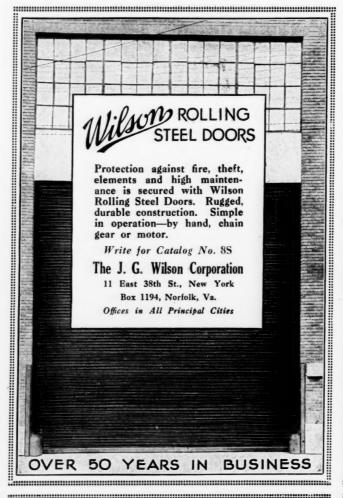
Roebling does not induge in nor encourage sweeping claims of superior wire rope economy. Such claims, if generally made, would merely confuse the rope user. ¶ For the guidance of rope buyers, however, Roebling does assert that when gauged by the work performed, NO wire rope, regardless of make or construction, will show lower general average operating costs than Roebling.

Wire Rope for all purposes

Roebling makes wire rope of a great variety of types and constructions, and therefore can supply a wire rope exactly suited to each particular requirement. ¶ The great stamina of all Roebling Ropes is primarily due to the quality of Roebling Wire. This Acid Steel Wire is renowned for its fatigue and wearing qualities. No better rope wire is produced. ¶ "BLUE CENTER" STEEL is the highest grade and is generally recommended for severe duty.

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Sci

's Record

C. S. A.

32

Stacks and Work

Ga. n St., City

BURSTING OF MAIN JAMS SPAN TRAFFIC

Floods Cellars at 8th and Race and Perils Foundation of Building

Shooting a stream of water twenty feet into the air a water main break at 8th and Race streets at 5:20 A. M. today ripped holes in the sidewalk and street, flooded cellars, delayed



To avoid this use READING PUDDLED IRON PIPE

READING IRON COMPANY
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Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Iron

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ESTABLISHED IN 1784

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NEW YORK
CLEARING HOUSE
MEMBERSHIP
NUMBER ONE



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Devoted to the Upbuilding of the Nation Through the Development of the South and Southwest as the Nation's Greatest Material Asset

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BALTIMORE, MARCH 31, 1932

Single Copies, 20 Cents.

Another Way to Reduce

Government Expense

A BOLISH the Federal Farm Board. Liquidate its Stability (?) Corporation through which it attempted the impossible in the light of world experience. Repeal the Federal Agricultural Marketing Act. Get the Government out of business in all schemes that involve competition with private business. They have proved economically unsound and account for a large part of the government deficit. Such is the rising tide of protest against throwing more of the taxpayer's money into a bottomless price-control pit.

Disillusioned farmers have found that the stored surpluses controlled by the Farm Board and its affiliated agencies, instead of benefitting them through stimulating prices, have acted as a price depressant and have continuously tended to unsettle market conditions. In growing numbers, as they have become more convinced that the policies followed under the Agricultural Marketing Act are unwise, farmers are helping to swell the demands of business men for the Government to end what at best was only a temporary palliative. Congress has heard from "back home" and knows that the people are not in the mood to experiment any longer with a plan which has failed wherever it has been tried.

The Florence (Ala.) Times of March 19 in a leading editorial, "Alabama Opinion of the Federal Farm Board," says that more than 60 editorials have appeared in scores of Alabama newspapers condemning the operations and policies of the Federal Farm Board. Many of these editors are close to the soil, and Alabama is primarily an agricultural state.

"Originally," reminds the Times, "the Board was strongly espoused by the party in power, but since it has wreaked only devastation upon the farmers of the country, the party is not so strong in support of it, but is loath to discard it for fear that many politically inclined employes might find themselves out of a job."

In a letter to the Manufacturers Record, a South Carolina business man writes:

"The Farm Board loan of \$500,000,000 has been the greatest possible curse to agriculturists. The Government should be eliminated from business as much as possible, for Government in business means that inefficient politicians and their friends get jobs at the expense of the taxpayer. There is real danger to the country from the vote-seeking, self-interested official class which is growing day by day. This class is in league with the non-taxpayer who is willing to see business wrecked from jealousy, and some vote-seeking office holders are willing to see it continue, so long as they get theirs. There is no justice in this and it is not correct Government business to tax one class and to leave the other out entirely. If there is any benefit due to the citizens of the United States from their Government, they should all be taxed, if only a nominal amount, so they would take an interest in seeing that what they pay in taxes is not wasted."

But the non-taxpayer does not entirely escape. Taxes received by the Government come out of the pockets of business and the consumer contributes his part no matter through whom the tax is collected. High taxes are imposing a burden which is hindering employment. At the time Congress passed the law, the country was perhaps in a position financially to make such an experiment with the Agricultural Marketing Act. It has proved too costly and too barren of results to be continued, even had the country remained prosperous.

Dameron H. Williams, a director of the American Cotton Shippers' Association, when testifying before a Senate Agriculture Sub-Committee in hearings on the Borah bill to limit salaries paid to Farm Board members and borrowing and affiliated organizations, contended that the Board "by unwise use of its powers" is pursuing a course with respect to co-opera-

tive marketing that "will wreck completely the cooperative movement."

"The Federal Farm Board issue," said Walter Parker to members of the Oklahoma State Cotton Exchange, "is not whether there shall be co-operatives, or what salaries they pay. The issue is whether the Federal Government shall be permitted to use its powers of law and and its tax revenues in ways that are hostile to wholesome commercial and agricultural philosophy and contrary to sound economic law and practice.

"If producers desire to set up co-operatives and function through them, they have a right to do so. But the Federal Government has no right whatever to tax the people in order to obtain money with which to enable the Federal Farm Board to attempt to destroy a wholesome and useful system of business in order to safeguard some other and as yet unsuccessful scheme from the normal perils to which it is subject. Yet that is what the Farm Board has attempted to do with the \$500,000,000 of taxpayers money given it by Congress. That money has been used in the futile effort to set natural law aside, and in so far as the cotton and wheat producers are concerned, it has been a detriment, not a help. The high cost of such nostrums is now a matter of nationwide concern. Taxpayers in all parts of the country are now rising in revolt against such expenditures and against extravagant spending by Government on a multitude of other unnecessary activities."

A \$500,000,000 appropriation has been distributed in the attempted stabilization program. Hungry eyes are on the \$200,000,000 additional for the supposed help of agriculture sanctioned by Congress in the Reconstruction bill. The Government may not be able to salvage much out of the \$500,000,000 given the Federal Farm Board under the Agricultural Marketing Act, but no more money should be appropriated. The taxpayer is asking for an accounting of Government stewardship.

Liquidation of the Farm Board, or more appropriations is the alternative. More appropriations mean that the taxpayer must dig deeper, and certainly business and the people are in no condition to stand such an additional strain.

Liquidation of the Federal Farm Board and its affiliated semi-public agencies is another way to reduce Government expenses.

Increased Cotton Consumption

COTTON consumption in American mills for February amounted to 450,018 bales, a gain of 16,642 bales over February, 1931. More than 81 per cent of the country's cotton consumption was in the cotton-growing states, which is a record high mark for the South since it became the dominant cotton-manufacturing region of the United States. The gain in consumption for February by mills in the cotton-growing states was 23,636 bales, as contrasted with a decline of 6994 bales consumed by mills in other states.

The February total added to the South's cotton-manufacturing leadership for the seven months ended February 29 of the present cotton season. Up to that time, 2,523,000 bales had been consumed in the cotton-growing states, an increase of 221,000 bales compared with the corresponding period of last season, while the entire consumption for the country, 3,081,000

bales, was only 187,000 bales larger, as there was a decline of 34,000 bales reported by mills outside the South.

The 25,189,748 active spindles in the country's cotton mills for February operated 6,566,805,913 spindle hours. More than 67 per cent of the active spindle and 76 per cent of the spindle-operating time was reported by mills in the cotton-growing states.

Cotton exports for the seven months ended February 29 amounted to 5,924,000 bales, or 1,012,000 bales more than were exported for the corresponding months of the previous cotton year. Exports to the United Kingdom were about the same as a year agon while Japan and other Asiatic countries more that doubled their purchases of American cotton compand with a year ago. Total exports during February amounted to 970,000 bales, compared with 432,900 bales exported in February, 1931.

In view of the continued improvement in cotton manufacturing in the South and sales abroad during March, textile activity in this section is one of the bright spots in the business situation.

Latin American Trade

SAN ANTONIO reports a volume of \$30,000,000 d exports to Latin American countries last year. This brings to mind that the Fourth Annual South western Foreign Trade Conference is to be held April 25-26, at Dallas, under auspices of the Dallas Chamber of Commerce and the Foreign Trade Club d North Texas. The purpose of the conference, as in the past, is to encourage and extend our export trade and to provide a medium for exchange of ideas between those interested in foreign commerce. The slogan of the Dallas meeting is, "The Southwest Needs More Foreign Trade," which might well be adopted as a slogan for the Southern states, with this change, "The South Needs More Latin American Trade."

Strategically located between the great industrial ized centers of the North, requiring raw material and products of every description, and Mexican and Latin American markets for manufactured goods, in South has a great opportunity to develop trade is both directions.

Foreign trade in the mind of much of the South means its raw cotton exports. In a normal year about 50 per cent of its cotton is sold abroad, yet the represents less than 5 per cent of its total volumed production and trade. Comparatively, very little moderation of the sold to Latin American countries. Cotton shipments are a vital part of Southern exports, but due to the increased production of foreign cotton all lessened consumption in recent years, there is all the more incentive for the South to develop sales outled for cotton goods as well as other manufactures. It logical foreign trade is with Mexico, Central and South America. In all the vast area and grewing

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population of these comparatively new countries, which have not developed industrially to supply their needs, there lies one of the greatest opportunities for the Southern manufacturers. A start has been made in securing this trade.

The field is open to Southern manufacturers, who have the advantage of nearness to Mexico, Central and South America, and with telephone communication and rapid transportation lines joining the South with Latin America, the South is in a position to do business with greater ease than with European countries. These advantages will be further strengthened when highways are fully developed into Mexico and southward.

American exports to Mexico amounted to \$116,000,000 in 1930, and we bought \$80,000,000 of goods in return. Our exports to all the Central and South American countries during 1930 were valued at \$686,000,000 and our imports were \$780,000,000.

Commodities of all kinds were supplied by American producers. Some of the important products listed in our sales to these countries included: Meat and meat products, \$25,000,000; dairy products, \$3,847,000; leather, \$2,921,000; boots and shoes, \$4,288,000; grain, \$13,627,000; tires, \$6,913,000; tobacco leaf, \$1,500,000; cigarettes, \$2,900,000; manufactured cotton, \$11,400,000; wood, \$14,334,000; coal, \$6,460,000; petroleum and petroleum products, \$52,961,000; iron and steel products, \$20,000,000; copper wire, \$2,224,000; office equipment, \$4,622,000; harvesting machinery, \$3,676,000; tractors, \$7,222,000; motor vehicles and parts \$58,000,000.

The present manufacturing capacity and industrial resources of the South place it in a position to supply much of the demand for these commodities.

Our principal imports from Central and South American countries are:

Hides, \$16,500,000; sheep and goat skins, \$13,597,000; bananas, \$34,794,000; cocoa, \$18,241,000; coffee, \$203,000,000; sugar, \$76,000,000; rubber, \$2,149,000; wool, \$4,234,000; clothing and combing wool, \$4,663,000; straw hats, \$1,935,000; mahogany, \$1,389,000; petroleum, \$62,000,000; iron ore, \$4,926,000; copper, \$45,730,000; lead ore, \$6,251,000.

It will be noted that with the exception of coffee and a few other tropical products all the imports from Latin American countries compete with American producers. Yet, of all our foreign trade, it is less competitive from an industrial standpoint, in that we sell manufactures principally, and buy, largely, raw materials.

In addition to Mexico with more than 16,000,000 people, the tremendous population of the West Indies, Central and South America is often overlooked. Cuba has a population of about 3,700,000; Haiti, 2,300,000; San Domingo, 1,200,000; and San Salvador, 1,500,000. In Central America there are more than 4,000,000 people, and South America has a population in excess of 50,000,000. The growing demands of these peoples offer a vast market for products of every description, within easy reach of the producers of the Southern States.

\$650,000,000 the Value of Gas Consumed in 1931

A CCORDING to the American Gas Association, the manufactured and natural gas utilities, representing about 90 per cent of the industry, reported revenues in 1931 of \$649,000,000 as compared with \$682,000,000 during the preceding year. Sales of manufactured gas were \$373,000,000, a drop of 2.8 per cent, and sales of natural gas were \$276,000,000, or 8 per cent less than in 1930. Manufactured gas production totaled 349,146,000,000 cubic feet, a decline of 2.6 per cent, and the volume of natural gas distributed was 678,433,000,000 cubic feet, a decline of 9 per cent. Natural gas used for industrial purposes was 202,957,000,000 cubic feet, which is a decrease of 12 per cent from the year 1930.

This decline is in line with the reduction in other basic fuel industries and the Association points out that, in comparison with other fuels, the showing for gas is favorable.

Were it not for the continued depression, gas consumption, by reason of large facilities for supplying natural gas to communities throughout a wide area would very probably have shown a decided increase last year. The expansion of pipe lines for distribution of the natural product from the fields of Louisiana, Oklahoma and Texas into the Southeast and middle West, marked the greatest industrial development of 1930, calling for an expenditure of \$200,000,000 for construction purposes.

Natural gas is an important growing industry in the South. It has an enormous potential development from almost inexhaustible supplies, and its distribution system extends over great distances. The South alone consumed more than 252,000,000,000 cubic feet, or 37 per cent of the country's total of natural gas last year, and of this amount 73 per cent was taken by 65,128 commercial users in the four states of Louisiana, Oklahoma, Texas and West Virginia. The Southeast, with the completion of natural gas pipe lines into that section, is rapidly becoming an important user of the fuel, although the consumption figures are not yet available.

Greater utilization of natural gas as industry becomes more active will contribute added wealth and increase the buying power of the great gas-producing regions of the Central South and Southwest. The expansion of pipe facilities in 1930, as mentioned, has made the fuel available to the middle West and to the Southeast, and with further expansion into the Eastern sections a still larger development will be assured.

Evidences are coming to the surface to indicate that we are more or less through with the soft life into which prosperity without precedent lifted us and are now beating back to the point of doing more things for ourselves. This may be unpleasant to those who have been doing things for us and profiting therefrom, but it is not without character value.—
St. Louis Globe-Democrat.

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The Economics of Plant

Location

Vanishing earnings and decreased dividends have forced upon present day business management a critical scrutiny of manufacturing costs. In 1932 there will be less leeway for uneconomic practices, and every policy, no matter how justified by tradition, must be cross-examined on its merits. Changes in plant location are by no means requisite in thousands of cases, perhaps not in the great majority of the cases; but plant location is so frequently left to inertia that the next year or two will undoubtedly see a considerable shifting of industries for the sake of survival

The economics of plant location is a particularly profitable subject of study, because the locus of manufacturing plants has very frequently been the result of chance. This chance most frequently hinges upon an individual. Henry Ford is an electrician in Detroit. He develops an automobile, needs capital, is able to raise the capital among local friends, and Detroit is inevitably the locus of his business. In that case it happens that Detroit becomes the motor city, and various economic conditions justify a location which originated in the personal affairs of the founder.

Very frequently, however, the home community of the pioneer developer of a product is not ideal as the sole manufacturing point, and the company is wise enough to build in additional manufacturing centers, close to major markets. Where a company does not have this enterprise; where it fails to move and is determined to go along on old lines, even though its location is costly, competition may prove disastrous.

There are many industrial plants today which indeed were located with very thoughtful consideration of economic necessities, but the circumstances have changed. Increasing transportation costs, for example, have considerably altered the facts of industrial communities. A constant migration is taking place from former centers of industry to new and more favorable points. The cotton industry has moved south not

By C. H. H. WEIKEL

Industrial Agent,
Bethlehem Steel Company

only because of a lower labor cost and nearness to the source of raw materials, but because of other advantages for profitable operation.

The policy of hand-to-mouth buying, coupled with the insistent demand for better service, has also affected the location of industries. Many manufacturers who must deliver goods promptly on short notice cannot afford to be distant from their sources of supply.

The Cost Factor in Industry

Industrial companies today are going to win their markets on the basis of cost for equivalent product and service. There will be no large profits offering hiding places for inefficiencies. As between plants of comparable operating effectiveness, the race for profitable survival will be won by the plant so located as to have the lowest delivered cost of its products to its markets. This low delivered cost, of course, includes the various elements of manufacturing expense, as well as transportation. The major elements in this cost may be outlined as follows:

- The cost of assembling raw materials;
- The cost of converting raw materials into the finished product; and
- The cost of transporting the finished product from the plant to the points where it is used or sold.

In all three of these divisions the proper location of the plant has a bearing. Any company which is satisfied that it is getting the advantage from its location on all three points has an ideal situation, and there are doubtless many such cases. In most instances, there are advantages and disadvantages to be counter-balanced. Against the de-

sirability of changing plant location, there must, of course, be figured the cost of moving, including the losses of abandoning or sacrificing the existing properties.

The Raw Materials Factor

The initial cost to be considered in plant location is that of the assembly of raw materials. This is particularly important, of course, for factories which use heavy tonnage supplies. A manufacturer who pays one freight charge on the raw material from the mill to his plant and another freight charge from his plants to his markets is, to that extent, under a serious disadvantage in competing with the manufacturer who eliminates one transportation charge by locating his plant adjacent to the source of raw materials.

This problem is ever-present in steel consuming industries, which have an increasing tendency to gravitate to locations adjacent to steel plants. Bethlehem Steel Company has aimed to facilitate this movement in providing industrial analysts to study the needs of plants contemplating such moves. It is often clear that market conditions or other factors make a move unwise, but very frequently the facilities adjacent to a large enterprise afford useful economies to related industries. Bethlehem's major plants, for example (to cite the instance with which the writer is particularly familiar) are all served by short line or belt railroads, which are available to all the plants of other concerns in the community. A steel consuming company so located can obtain raw materials as needed, with a minimum of transportation costs.

As raw material is delivered promptly, as required, it is unnecessary for a plant so located to maintain large inventories. Consequently, less working capital is required, with a resulting economy in interest charges. Connection of these short line railroads with main trunk lines makes for minimum ease in shipment at minimum rates. The Patapseo & Back Rivers Railroad at Sparrows

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trunk railroads, as well as serving docks for delivery of products to vessels for water shipment. The Calmar line operating from the docks of the Bethlehem Steel Company at Sparrows Point provides direct service to the Pacific Coast.

The Bethlehem Steel plant at Bethlehem, Pa., is close to the Metropolitan pistrict markets. Its plant at Johnstown, Pa., is adjacent to large supplies of coal. So in the steel industry itself, one finds a variety of plant locations within a given company, governed by varying conditions and fulfilling different

The point of any plant location analysis with relationship to raw material is obviously to look for any improvement in total savings. There is, for example, a company which pays more than \$50,000 a year in excess freight charges on its raw materials by having established its plant less than ten miles outside of the switching zone of a carrier serving the plants supplying those materials. This is an example of carelessness in location where a difference of ten miles would have spelled a substantial annual saving without any alteration in the other pertinent factors.

Converting Raw Materials Into the Finished Product

The principal elements of conversion costs are wage rates, the efficiency of labor, taxes, cost of fuel, power and water. The ideal site for a manufacturing plant must be able to offer these items at the lowest total cost. The range of these problems is such as to merit the closest study.

A generation ago, some types of industries were concentrated near sources of power. Distribution of electricity has been so improved that the importance of this factor is considerably reduced. Small communities can obtain almost as cheap power as large ones.

A manufacturing company moving its plant to the vicinity of a raw materials industry will usually find available skilled labor. In addition, all the needed service facilities such as gas, water and power and so on are generally already established.

Another important consideration is to determine that sufficient land is available for adequate expansion. Too often industries have been established where future expansion is impossible except by acquiring additional space at inflated values.

There are a number of other conditions which, while hard to set up in a balance sheet, properly have an effect on the location of industries: These include climate, type of homes, grade

Point, Md., has connections with three of schools, churches, theaters, parks and book "The Handwriting on the Wall" other considerations. An influential factor in the welfare of employes is the cost of living in the proposed location as compared with other locations of similar advantages.

> Legislation is often an important item. and in certain classes of industries may be the major factor. Adequate banking facilities in a proposed new location must be given careful consideration.

Nearness to Markets

The relationship of markets to plant location has received very wide attention, perhaps to the point of over-emphasis. A cooperative survey made several years ago by the National Electric Light Association and the Metropolitan Life Insurance Company brought out the fact that "markets" was the reason most frequently advanced for the location of plants. The geographical extent of this country has indeed made branch factories a necessity in many industries. Automobile companies, for example, have had assembly branches on the Pacific Coast and in the South.

Generally speaking, however, it may be said that the importance of nearness to markets is in direct ratio to the transportation rate on the products. Goods of relatively light weight, not requiring any expensive special handling, and not calling for maximum promptness in delivery, may be manufactured at points distant from the sales area without incuring measurable disadvantage.

Market analyses should include not only such obvious matters as population, wealth, and character of the market, but likewise the ability of one's competitors to reach the same territory, and the somewhat intangible commercial advantages of being located near enough to the ultimate consumer to understand his problems and preferences.

Inertia of Invested Capital

Inertia and the cost of new plant construction operate frequently to ban even the consideration of the economics of plant location. The inertia of invested capital, however, has no place as such in the competitive situation of the present day. The building of a new plant may be imperative, even though the old equipment is operating at half capacity, for obsolescence quickly sounds the death knell of inefficient manufacture. A new plant, properly located, with modern equipment and designed for straight-line production methods can undersell a competitor who is located without regard either to his raw materials or his markets and occupying an old obsolete plant.

Arthur D. Little states in his recent

that "the price of progress is research." It is just as important to determine, by as scientific means as possible, the proper location for a plant with reference to its raw material supplies, manufacturing costs and markets as it is to determine the ways and means of improving a plant's products or developing new ones.

In the final analysis, all the elements of plant location must be reduced to a dollars-and-cents basis. The final choice of a location should always be determined by the effect a contemplated change will have on profits.

The keynote of the study of the development of new industries may be expressed in one word "facts." Data must be assembled and analyzed with respect to all the problems involved. I might add a quotation of Owen D. Young, "Facts are our scarcest raw material. This is shown by the economy with which we use them."

\$500,000 University Building

Washington, D. C. - Directors of Georgetown University plan to erect at once a \$500,000 recitation hall for the College of Arts and Sciences. The new building will be known as the White-Gravenor Building and will form the north end of the Andrew White memorial quadrangle. It will be of Neo-Gothic scholastic architecture to conform with the senior dormitory forming the west side of the quadrangle, 90 by 190 feet, five floors and basement. Along the entire front there will be an esplanade 40 feet wide, set in flagstone, with a seating capacity of 900. This is designed for outdoor commencement exercises and similar affairs. The building will house the Geology Department on the top floor and provide 20 class rooms, offices for the dean of the College of Arts and Sciences, registrar, and fireproof vaults. Emile G. Perrot, Philadelphia, Pa., is the architect, and the Charles H. Tompkins Cc., Washington, general contrac-

\$414,000 Dallas Sewer Contracts

Dallas, Tex.-The City of Dallas has awarded contracts as follows for the construction of storm sewers:

Open cut Dallas Branch—Carter & Hum-phreys, Tulsa, Okla., at approximately \$90,000

Tunnel section Dallas Branch—J. B. McCrary Company, Dallas, \$70,000

Mill Creek diversion to Turtle Creek—J. Lee and E. A. Vilbig, Dallas, \$92,000

Dallas Branch, Orange and McKinney to Maple avenue—McKenzie Construction Co., Dallas ,\$35,000

Peak's Branch from Pennsylvania avenue—J. Lee and E. A. Vilbig, \$107,000

Peak's Branch, Barry and Lindsley to Lindsley east of Fairview—Carter & Humphreys, \$20,000.

Reaffirming Established Principles

MYRON C. TAYLOR, Chairman of the Finance Committee, United States Steel Corporation, in an address last week before the Boston Chamber of Commerce, stressed "The Importance of Reaffirming Our Faith in Well Established Principles." Three outstanding features dealing with the primary factors in the nation's economic life were presented. "The first," said Mr. Taylor, "is the immutability of the unwritten law of supply and demand; the second is the necessity of continuing tariff protection; and the third is the menace of increasing taxation."

After briefly reviewing the variables and complexities of the depression which is world-wide in scope, Mr. Taylor said in part:

"Time-honored precedents in situations like the present, however, are worthy of utmost respect, and new panaceas should not distract our minds from fundamental truths. We cannot rebuild the economic world over-night. There are some principles which seem to be firmly established by tradition and to retain man's confidence. The law of supply and demand still functions.

"In considering some of the causes affecting supply and demand, it must be borne in mind that, because of the application of science and of changes of fashion in form, character, and quality, oftimes ephemeral, industry is ever in a state of flux. Without change there cannot be progress, but often change carries with it destruction of obsolete methods and machines and an accompanying disturbance in human relations as the price that every industry has to pay if it is to avoid decadence.

"In the endeavor to find a solution of our present troubles many plans have been advanced, some of them palliative, some constructive, but unfortunately, many ill-advised and destructive in character. The latter, like the nationalization of industry and the artificial fixing of commodity prices through attempted stabilization by governmental control, invite defeat at their inception because they are contrary to the law of supply and demand. It cannot be too strongly emphasized that, if any plan for the amelioration of our present economic difficulties does not harmonize with this great law, it is due to fail. Basic supply and demand conditions inevitably regulate prices in the long run. Artificial measures looking toward price control are sure to break down eventually.

The Need for Tariff Protection

"From the outset, our national industrial development has been aided greatly by the protective tariff policy. This system since the first tariff bill was enacted in 1789 has become part of the bone and sinew of our national economy. We have prospered under it—a few would

say in spite of it—and our industrial structure is now completely adjusted to the protective tariff system. As the result of this tariff policy we have set up an artificial state in which all values are based upon protection. The value of our labor, the value of our physical properties, the value of the securities issued against our properties, of lands and structures of all sorts, rests fundamentally upon a cost of production, augmented by a protected labor market, that is higher than that of any other country. If in a moment of fright we should tear down those tariff barriers behind which we have built this great nation, we would destroy our economic safeguards. Such a policy would offer no inducements for our products to flow out, but would encourage competitive products of other countries to flow in.

"Measured by quantity, the proportion of the national output of movable commodities that is exported—the products of our farms, our mines and our factories—is less than at the beginning of the century and about the same as immediately before the World War. This condition has resulted from the fact that, with its abundant resources, the United States has been able to increase rapidly its domestic production, while, at the same time, a growing population has been able to absorb the great bulk of this increased output.

"There are, however, indications that the growth of the domestic demand may slacken, for we are approaching a period when, by reason of the reduction of immigration, through restrictive legislation and lessened opportunities for employment, and of a further decline in the birth rate, a comparatively stationary population may be reached in the United States in the course of a few decades. Such a situation would naturally lead in the direction of controlled production in our industrial life.

"Controlled production may be expected to come about automatically as our surplus stocks become exhausted and as competition, spurred by necessity, discards obsolescent production equipment and adopts a justifiable price control that sacrifices some part of production volume to secure reasonable price levels for commodities. This also will bring about a re-distribution of work and a re-adjustment of living conditions throughout the country, which in industry will mean a reduced working period and a consequent greater leisure for the individual.

"Those unwilling to work under the conditions thus offered, it would seem, would follow the natural impulse of moving to smaller communities and cultivating the land for individual sustenance. Out of this simplification and rearrangement of life, with accumulating savings from rationalized productive activity, there would arise a growing demand for products old and new and with it a demand for workers, leading, it would seem reasonable to believe, to a new phase of the cycle of economic development. Ultimately, we should reach once more a period of enlarging pros-

perity, as has similarly been the case following past business depressions.

"There is no single remedy for the economic ills from which we are suffering, nor is there any valid reason for assuming that tariff reductions would even contribute to the cure of those ills. In the present period of business uncertainty any such policy would add a new element of uncertainty. It is only natural, therefore, that industry should view with alarm any tendency toward tinkering with the tariff. Such tinkering has always been a dubious policy. We need a continuing tariff policy to which our economic life can adjust itself.

The Evil of Excessive Taxation

"One of the causes of the present depression and one of the difficulties which confronts us in the restoration of normal activity is the enormous, world-wide burden of taxation which, irrespective of the increase due to the war, has otherwise been growing rapidly. The total cost of government, which was nearly \$3,000,000,000 in 1913, was in 1929 more than \$13,000,000,000. While the cost of government has been increasing by leaps and bounds, our population has increased about 27 percent in the same period. Since governmental costs must be in the end met through taxation, this tremendous increase in public expenditures, disproportionate to growth of population, shows what a terrific drain upon the resources of our people taxes have become.

"Because of the enormous private and public extravagance in which we have indulged of late, and the false gods we have followed, the time has come to call a halt, to take stock, to restore our sanity, individually and collectively. The hard knocks of necessary readjustments that we are taking will no doubt prove ultimately to have been the only cure for those ailments from which we in our vanity, in our over-indulgence, and in our intoxication have been suffering, and which would have led us along a troubled road to ultimate ruin. But we are not yet lost.

"Now we are facing reality again. And what is that reality? The things that were conceived in selfishness and born of arrogance have returned to the dust from which they came. So it has been in the past, and so it will always be. The splendors of Egypt and Assyria, the pride and pomp of Rome, the aggrandisement of France under Napoleon, the dream of imperial Germany,—all vanished. But whatever of beauty and truth these things contained are yet with us, bannered in our skies and reflected in our souls.

"We have learned that the false gods

"We have learned that the false gods of our ideals, the gods of size and speed, have proven powerless to help us. Bigness has afforded us no lasting happiness, and speed no economic security; hastily gained knowledge no wisdom, and swiftly moving pleasures no serenity. We should reaffirm our faith at the altars of simplicity, sobriety, and a better human understanding!"

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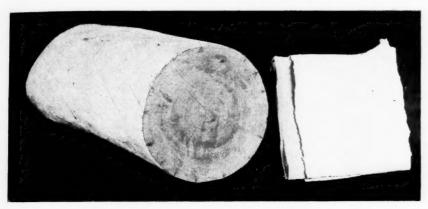
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Pulps and Papers From Southern Woods



Pulpwood and Wood Pulp of Southern Black Gum

The pulp was obtained by mechanical grinding of the natural wood and was not bleached. "Black" gum is one of the whitest woods known

TURERS RECORD, on the opportunity for the South to expand into the field of light-colored papers, we cited the new "white kraft" potentialities for profit. Far from involving revolutionary changes in chemistry and technic, the new white process is merely a modification of the established sulphate process. It is essentially the same as the mills now are using, except that it takes a less concentration of chemical in the cooking liquor and at the same time a greater net weight of chemical per pound of wood. For the resulting pulp, a two-stage bleaching method has been developed that is thoroughly effective and requires an amount of bleaching chemical well within recognized limits of economy. The bleaching results in a larger yield of pulp than by accustomed methods, and there is no serious loss in strength. This last observation is of extreme importance; it is something novel in yellow pine pulps, which usually require a large amount of bleaching agent and because of this excess suffer a marked impairment of strength when a bleached product is attempted. Two-stage bleaching is now available for more intensive application to the bleaching of Southern woods, and the low-cost raw material available to the Southern mills should prove a strong

IN the first article in the MANUFAC- factor in their development in the white paper field.

Adapting the New Process

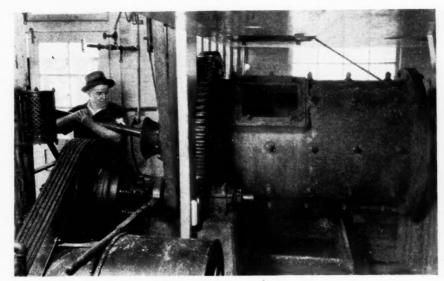
For existing plants to apply the modified kraft process would probably require some work of redesigning, supplemented by a reasonable quota of full-scale test runs to establish details of practice. The process itself can be adjusted to care for most of the Southern

By C. P. Winslow,

Director,
Forest Products Laboratory
Branch of Research,
U. S. Forest Service,
Madison, Wis.

Part II

pine species or a mixture of them. No additional digester capacity would be required; but, more evaporator equipment per digester, to recover chemical from the more dilute cooking liquor, would probably be a necessity. In a change-over made from brown kraft to bleached kraft, a ton of pulp under the modified process is the more expensive by the cost of the additional heat needed to recover the chemical and by the addition of the entire bleaching manipula-



Experimental Rod Mill at Forest Products Laboratory



Mill at Bastrop, La., of Southern Kraft Corporation, an International Paper Subsidiary

tion—say, about 60 per cent. Against this, there has been normally an average differential of approximately 90 per cent between the selling price of comparable bleached and unbleached products, this estimate being on the basis of quotations which have been current for the past 10 years.

The potential usefulness of the bleached pine sulphate pulp is, of course, determined by the two factors of cost and quality. Its fields of largest consumption lie in the general direction of book, writing, bond and strong lightcolored wrapping papers, for which purposes its use, either unmixed or as a substitute for high-quality bleached sulphite in mixed furnishes, seems a perfectly logical development for Southern mills. Whether it could be economically substituted for unbleached sulphite as the strength basis of newsprint and cheap magazine papers is not certain at this writing. However, the South has resources that give promise from the newsprint point of view.

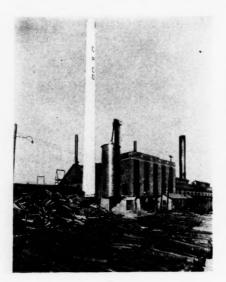
The sulphite and sulphate processes must be carefully differentiated. The sulphite process consists in the pulping of wood by cooking it with an acid liquor, in which bisulphite of lime supplies an essential ingredient. It is used mostly with spruce or hemlock, not being suited to the pulping of woods high in resin. A good sulphite pulp is generally light in color, strong, and easy to bleach. Unbleached, it constitutes 20 to 30 per cent of the average sheet of newsprint, being used as a binder for the 70 to 80 per cent groundwood component. In this use it runs to very large consumption total.

Bleached, it finds further wide use in book, magazine and writing papers when mixed with pulps of other types. It is also used in the production of specialities, glassine and certain grades of wrappings.

These facts are of immense potential interest to the South. Slash pine grows rapidly under ordinary conditions, and plantations might be established solely for pulpwood cutting on a rotation of about 20 years. Triple-meritations of about 20 years.

In Regard to Newsprint

Recent examinations and tests at the Forest Products Laboratory have confirmed an idea advanced by Dr. Charles H. Herty of Savannah and New York, that the trunk of the young slash pine tree consists largely of sapwood and contains relatively small quantities of resin, the substance which is usually considered the bar to the pulping of the pines by the sulphite or ground-wood



New Power Plant of Columbia Paper Co., at Bristol, Va.

potential interest to the South. Slash pine grows rapidly under ordinary conditions, and plantations might be established solely for pulpwood cutting on a rotation of about 20 years. Triple-purpose forestry is also a possibility with this species. Indications are that pine sulphite pulp, unbleached, may provide Southern mills with an essential ingredient, heretofore lacking from local sources, for the production of large tonnages of newsprint, cheap book, magazine, tablet, drug-store wrapping and similar papers. In experimental runs at the Forest Products Laboratory, newsprint samples of very acceptable color and general quality have been produced from mixtures of sulphite and groundwood pulps from young slash pine.

Pulping Old Growth Pines

Experiments conducted at the Forest Products Laboratory show that reduction of the older heart-bearing and high resin-content pines by a sulphite process may also be practicable. It has been found that if the lime in standard sulphite liquor be replaced by sodium or by ammonia, the effectiveness of penetration and the efficiency of pulping are increased markedly. The ammonia or sodium salts apparently have a specific action on resins. Quite satisfactory sulphite pulps have been made in this way from Southern pines carrying high percentages of heartwood.

Newsprint From Southern Gum

Newsprint has recently been made from hardwoods at the Forest Products Labor grindi South mixin propo same a sma for st portio one of the groun

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Laboratory on an experimental scale by grinding such hardwoods as aspen, Southern black gum and paper birch, mixing this ground wood with a certain proportion of sulphite pulp from the same hardwood species, and then adding a small amount of long-fibered sulphite for strength purposes. In the sapwood portion of Southern black gum, we have one of the lighest-colored woods known. The use of black gum sulphite and ground wood, with a certain proportion of the slash pine sulphite, has also resulted in the production of entirely

As to Hardwood Pulps

satisfactory newsprint papers in the

Another development of interest to the South is the working out at the Forest Products Laboratory, followed by its commercial introduction, of a semichemical pulping process particularly suited to hardwoods. The chemicals used are practically neutral, and the wood chips are impregnated with the chemicals prior to cooking, by the application of either steam or hydraulic pressure. A third distinctive feature is that the wood is merely softened in the cook-



Wood Softened by Cooking Treatment
The semichemical pulping process is
particularly well suited to hardwoods

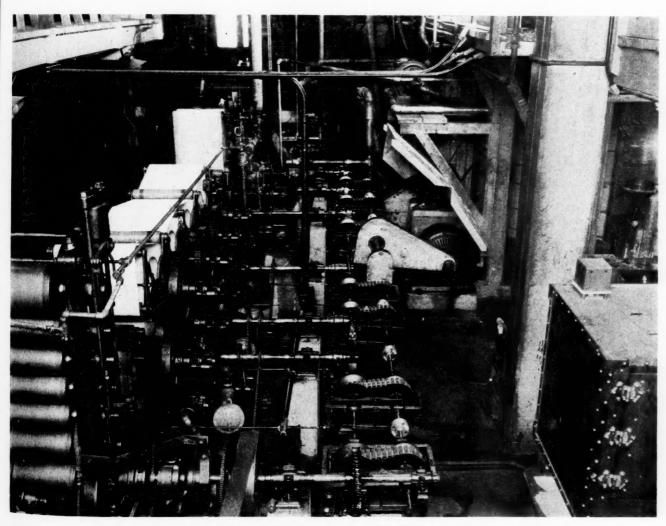
ing treatment and is subsequently reduced to pulp by mechanical action, such as maceration in a rod mill. If a dark-colored species is used, the resulting pulp is dark, and if some light-colored species, such as freshly-cut black gum is used, very light-colored papers can be made.

The semichemical process has had an extensive commercial development in the past five years because of its special suitability in the pulping of extracted

chestnut chips, the by-product of tanning extract plants. Prior to 1925 the extracted chips were of use only as fuel. Five semichemical pulp mills in Southern states are now manufacturing this commodity. In another mill black gum is pulped by the semichemical process and is converted into machine-glazed wrapping papers of a light color. By a little more careful selection of wood, this mill could undoubtedly produce from gum a semichemical paper suitable for cheap print or tablet use. In view of the unquestioned possibilities of the semichemical process in the South and the successful beginning it has made, further developments in this direction may reasonably be looked for.

Some General Considerations

The idea that an unbounded expansion of the pulp and paper industry in the South would completely solve the problem of cut-over and idle lands is misleading. The profitable utilization of Southern lands through a quantity program of forest production depends, after all, on the pulp mill taking its proper but minor quota of forest growth. A better measure of the value of any in-



Experimental Fourdrinier Paper Machine With Precision Control at Forest Products Laboratory

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Southern Kraft Corporation Plant, an International Affiliate, at Mobile, Ala.

dustry than the mere quantity of raw material used is the number of workers employed and the amount of wages paid. On this basis, the importance of a firmly established pulping industry to the South is manifest. From a thousand feet of logs, the pulp mill produces pulp having more than twice the value of the lumber that could be sawed from the same logs. The difference means a broader margin to provide for work and wages.

A recent study has shown that in the conversion of 1,000,000 cubic feet of timber into lumber, planing mill products and boxes, 75 men were employed, \$75,000 in wages was paid, and the resulting products were valued at \$250,000; whereas, in the conversion of the same amount of wood into pulp and finally into a good grade of paper, the employes numbered 150, the wages were \$200,000. and the finished products were valued at \$900,000.

Possibilities Now and Later

Considering now the relation of potential developments in the South to the pulp and paper industry of the country as a whole, the primary advantage of the South lies in its cheap wood supply. Conversion costs may tend somewhat to approach an equality with similar costs in other favorably situated producing centers. But, supplies of pulpwood in other regions are by no means exhausted, and expectation should not be held out that the establishment of a pulp mill in a community means wood prices comparable with prices that may have been paid in older pulp-producing regions for preferred species. A community objective should be, through a steady supply of cheap pulpwood, to develop a successful industry with its attendant wages and other contributions to economic prosperity.

Commodities that entail high production costs and sell at a high price can absorb considerable increases in material costs; whereas, cheap raw material

is one of the competitive essentials for the cheap commodity produced in bulk. On this principle, the South is clearly at an advantage in producing kraft and semikraft papers for wrapping and mechanical use, wall and container boards, and other products in that general field. A line of vast importance that may open up with new technical developments is newsprint, in which cheap production in bulk is a basic necessity. Generally speaking, the United States is a large importer of newsprint paper and of sulphate, ground-wood, and sulphite pulps. Hence arises the basic opportunity for Southern competition, not with the domestic producer, but with the foreign importer.

Beyond these immediate possibilities lie potential new uses for woodpulp and the further adaptation of present uses which are to be expected in the logical development of the pulp and paper industry. Obviously, the full realization of such possibilities is dependent on a determination of all of the exact chemical properties and constituents of the pulps that may be produced, and how these properties may be improved or modified by control of the cooking variables.

The South holds possibilities for producing many types of fine papers not now produced from Southern species, and possibly other special products for which the special characteristics of Southern woods may make them adaptable.

Sample Booklets

The Forest Products Laboratory has prepared a representative selection of papers from Southern woods, illustrating the suitability of these species for the paper industry. The 25 papers, assembled in sample booklets, comprise the main types of product discussed in this paper, as well as several other types from single or mixed pulps. The booklets are available to interested individuals and industrial or commercial

groups, and technical information on the processes involved may also be obtained on request.

Laboratory Equipment

The Forest Products Laboratory equipment contains some of the latest devices for pulp and paper making. The experimental rod mill used was introduced from the mineral industry into paper making. In the semichemical pulping process it takes the softened chips and macerates them to fiber size for their final run on the paper machine. The rod mill is a product of the Allis Chalmers Manufacturing Company of Milwaukee. Other manufacturers of this equipment are:

The Mine and Smelter Co., Denve, Col.

Shartle Brothers Company, Middle town, O.

Minitowoc Engineering Works, Minitowoc, Wis.

Abbe Engineering Company, New York.

Hardinge Company, Inc., York, Pa.

The experimental Fourdrinier paper machine was made by Pusey and Jones Wilmington, Del. The drive of this machine is a Reeves, manufactured by the Reeves Pulley Company, Columbus, Ind. The precision control devices are made by various manufacturers of such equipment including the Bristol Company, Waterbury, Conn.; the Taylor Instrument Company, Rochester, N. Y.; the Foxboro Company, Foxboro, Mass.: the Cambridge Instrument Company. New York.

Stonite presses are made by Stowe and Woodward, Newton Upper Falls Mass. Auxiliary equipment includes a baby Jordan manufactured by the Noble Works and a Marx beater; and an Erkensator centrifugal screen, the latter manufactured by the Bird Machine Company, East Walpole, Mass... and the Tolhurst Company of Troy, N. Y.

(This is the second and concluding article by Mr. Winslow on Pulps and Papers From Southern Woods.)

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Atlanta Bank Building



Main Banking Room

Tand Southern National Bank. Atlanta, has occupied its new and remodeled building which represents an outlay of more than \$1,000,-000 for construction and equipment. About two years ago the bank acquired the former Empire Building, a 14-

HE Citizens

story structure with frontages on three streets, and constructed largely as the home of the Third National Bank of Atlanta which occupied it from 1902 to 1912. In 1919 the Third National, one of Atlanta's leading banks, was consolidated with the Citizens and Southern National Bank.

The first three floors of the building to be occupied by the Citizens and Southern were obstructed by columns designed to support its weight. For reconstruction of these floors, the columns presented difficulties, but by use of a system of bridging girders and new structural steel so located as to permit unobstructed office spaces, a solution was found. Up to the third floor the building was entirely rebuilt; above, it was remodeled along modern lines. Seven high speed automatic, self-leveling, push button elevators were installed. The elevator shaft was moved forward to make room for a part of three wing additions with 65,000 additional feet of floor space for office tenants.

Below these wings and in a portion of the original building, the main banking room, two stories high, is located. Under it, basement space is occupied by a vault said to be one of the ten largest in America and, with exception of the Atlanta Federal Reserve vault, the largest in the South. The basement also provides space for coupon booths, anterooms, paneled in white pine and ventilated by forced draft with conditioned air. All banking quarters, including the third floor working space, also are provided with conditioned air.

With exception of lobby space, ground floor of the original building is devoted to officers' quarters in one end and a

Savings Department in the other; a mezzanine second floor accommodates the Trust Department, Credit and New Business departments, and the Citizens & Southern Company, securities affiliate, and the third floor directors' and conference rooms and clerical work space.

The building is of Roman architecture. Outside dimensions are 85 feet on Marietta and Walton streets and 206 feet on Broad street, exterior of the lower floors being faced with Indiana limestone. A curb surrounding the structure is of Pine Mountain granite. In the basement and three lower floors occupied by the bank there is a total of 57,000 square feet of floor space, with 103,000 square feet of rentable floor space above the banking quarters. Construction of the banking quarters involved the use of Georgia, Alabama, Tennessee, Utah, French and Italian marbles. The banking room is 40 by 206 feet, with a 30-foot ceiling, and the vault is 90 by 33 feet, containing 6500 safe deposit boxes, with an ultimate capacity of 12,000. The weight of the vault door is 50,000 pounds. Natural gas is used for heating.

Hentz, Adler & Shutze were architects for the project; Robert G. Lose, the consulting engineer, and the Southern Ferro Concrete Company, general contractors, all of Atlanta. The following sub-con-



Citizens and Southern Bank Building in Atlanta

tracts were awarded, all Atlanta unless otherwise specified:

Interior marble—Alabama Marble Company, Gantts Quarry, Ala.

Bronze work—Art Metal Construction Co., Jamestown, N. Y.

Terra cotta—Atlanta Terra Cotta Co., East Point, Ga.

Concrete forms-Southern G F Co.

Structural steel—Ingalls Iron Works Com-pany, Birmingham, and Austin Bros Bridge Co.

Acoustical work-Brooks-Fisher Insulat-

Metal windows-New York branch Camp-bell Metal Window Corporation, Balti-more

Lighting fixtures-Capital Electric Co.

Limestone-Capital Stone Co.

Weatherstripping and caulking—Chamber-lain Metal Weatherstrip Co.

Ornamental and miscellaneous iron—Cole Iron Works

Glass and glazing-F. J. Cooledge & Sons Steel sash-Crittall Casement Window Co. Electric wiring-Walker Electrical Co.

Painting-William Wilson Company, Inc., and M. Dwoskin & Sons

Excavating, wrecking and hauling-Hudgins Transfer Co.

Plastering-Jacobson Plastering Corp.

Tile and terrazzo—J. Korizon Tile Co. and Piedmont Tile Co. Sheet metal work-R. F. Knox Co.

Pneumatic tubes—Lamson Co., Inc., Syracuse, N. Y. Sprinkler work-Loftis Plumbing & Heating Co.

Heating—William A. Manning & Son Ventilating—C. A. McGinnis Co.

Hollow metal doors—Metal Door & Trim Co., La Porte, Ind.

Vault work-The Mosler Safe Co., Hamilton, Ohio

Elevators-Otis Elevator Co.

Elevator enclosures — Paltridge Metal Equipment Co., Chicago Damp-proofing—Par-Lock Southern Appliers, Inc.

Steam cleaning-Chris Paschen, Chicago

Millwork-Pattillo Lumber Co.

Roofing and waterproofing_O. A. Smith Co.

Plumbing-Stephenson Company, Inc.

Linoleum-Thompson & Company

Steel sash—Truscon Steel Co., Youngstown, Ohio

Finish and miscellaneous hardware—J. M.
Tull Rubber & Supply Co.
Waterproofing — Western Waterproofing

Ash hoist-Gillis & Geoghegan, New York

Metal doors—Richmond Fireproof Door Co., Richmond, Ind.

Face brick—Brookhaven Pressed Brick & Manufacturing Co., Brookhaven, Miss.

Common brick-Chattahoochee Brick Co.

Hollow tile, cement, sand, gravel, lime— Cromer & Thornton, Inc.

Miscellaneous hardware—Fulton Supply Co. and Beck & Gregg Hardware Co.

Lumber-Frank G. Lake

Reinforcing steel-Kalman Steel Co., Chi-

Laboratory tests—Froehling & Robertson, Inc., Richmond, Va.

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Organizing Prosperity Carnival

C. C. Gaspard Investments

New Orleans, La.

Editor Manufacturers Record:

To put idle equipment to work it is necessary that selling and buying be resumed on a tremendous scale. Only this will bring about a resumption of activity. Therefore, a selling movement is to be launched and by faithful co-operation and vigorous effort on the part of nationally known industries, jobbers and retail merchants we shall bring about improvement, notwithstanding the enormity of the task.

The plan formulated has two phases, each one performing its proper function independently. The first phase has to do with retail selling and buying of merchandise and will be conducted by retail merchants in 10 or 12 of the largest cities of the Cotton Belt. Immediately following perfection of details for the large cities, some other cities and towns would take up the chase, so to speak, but all under the auspices and business direction of a Commodity Exchange Corporation which is now being organized for that purpose. It will attend to details, assume the responsibilities and furnish the capital which such a plan and undertaking involve, to achieve success

The movement is to be launched on May 2, and no doubt many cities will want to hold a one, two or three day festival or carnival. Some progress is already being noted. This nation-wide selling and buying campaign bears the name of Prosperity Cotton Carnival. It is a patriotic gesture, the South's contribution to the Washington Bicentennial Celebration.

Cotton is a commodity which we can put to immediate use and we are going to use it to start selling and buying. In accompanying the sale of retail merchandise during the first two weeks of the Prosperity Carnival, merchants are to offer certain merchandise which they wish to dispose of on a basis of an even exchange: the second two weeks, 75 per cent cotton and 25 per cent cash, the third two weeks 50 per cent cotton and 50 per cent cash and during the fourth two weeks the article will be paid for on a basis of 25 per cent cotton and 75 per cent cash. In all cases, however, the cotton is to be traded in at an arbitrary value of 12½ cents a pound, Middling basis.

In pursuit of this course the merchants will offer for sale those articles which they care to sell under the terms and conditions outlined; only such articles will be tagged.

The plan will also popularize the price of cotton because every certificate issued by the trustee of the Commodity Exchange Corporation will be a bona-fide lien on the cotton stored in a Federal Bonded Warehouse. The merchants obligate themselves to do only two things to make the movement the anticipated success: First, they must advertise their respective merchandise extensively; the other obligation is to hold the cotton certificate at least until December 1, 1932, or until such time as the price of

cotton, Middling basis, reaches $12 \frac{1}{2}$ cents a pound, if prior to that date.

The second phase of the Cotton Prosperity program is so designed as to draw into its plan, to bring about general prosperity, nationally known industries, such as automobiles, trucks and tractors; agricultural implements; building materials; cash registers and adding and sewing machines and dictaphones; furniture manufacturers; jewelers and manufacturers of radios and refrigerators. Those invited to participate in the Prosperity Cotton Carnival have 20,000 agencies throughout the United States. Unlike the retail merchants in the large cities of the Cotton Belt the industries participating will accept cotton only as part cash payment on a designated price range schedule.

C. C. GASPARD

Tariff Rules of Procedure

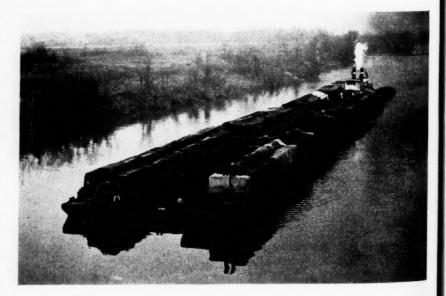
The Tariff Commission has issued a revised edition of the rules of practice and procedure, containing a few minor changes which emphasize the fact that when submitting an application for investigation, under Section 336 of the Tariff Act of 1930, it is not necessary to refer to confidential material unless such material actually accompanies the application. Briefs filed after a hearing in an investigation under Section 336 should be based on evidence produced at the hearing, and not contain new material.

Building Large Dredges

Memphis, Tenn.—The dredging fleet of the United States Engineers will be increased about July 1 by the addition of the dredges "Potter" and "Ockerson," under construction at the plant of the Dravo Contracting Co., Pittsburgh, Pa. The contract for the two dredges, involving \$904.864, provides for delivery at Memphis. They are designed for use in the Mississippi River below Cairo, Ill., for dredging bars in order to maintain the project channel of 300 feet in width and nine feet in depth at all stages of the river.

The dredges are of steel construction throughout, of the dust pan, suction head type, self-propelled with tunnel type propellers. They are 214 feet in length, have 46-foot beam and nine-foot depth. In working conditions the dredges will have a draft of about five feet. The dredging machinery consists of a 32-inch discharge single suction centrifugal pump, driven through a reduction gear by a steam turbine of 1400 brake horse power. The pump will have a capacity of dredging sand and gravel from the river bed of from 1500 to 2000 cubic yards per hour. The dredges are propelled by triple expansion steam engines of about 600 indicated horsepower, and the boilers are of the water tube marine type.

A Record Tow for Warrior River



Here are shown 11 barges, in grapple with the steamer "Montgomery," said to comprise the largest tow ever to go down the Warrior Riyer to Mobile, Ala. The tow recently left Tuscaloosa, handled by the Mississippi-Warrior Lines. It consisted of 11 barges, loaded with 2000 tons of coal, 40 tons of canned goods and 7200 bales of cotton. The coal is shown in the center barges; and the cotton, under tarpaulins, is piled high on the decks of the barges on each side. The previous record tow consisted of nine barges, loaded with cotton, and handled over the Warrior to Mobile last year.

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IRON, STEEL AND METAL MARKET

Metals Show Weakness Again

New York, March 28-[Special.]-The metal markets have been more inclined toward weakness than otherwise during the past week. On Wednesday the price of lead was cut \$3 per ton to 3c per pound, New York, which coincides with the low point of 1897, one of the bottom points in history. Zinc was sold \$1 per ton cheaper at 2.75c per pound, East St. Louis, though was firmer later in the week. Zinc ore declined \$1 per ton in the tri-State district to \$17, while lead ore fell \$2.50 per ton to \$25, also the lowest since 1897. Antimony dipped in price a bit, or to 61/sc per pound, duty paid. Silver fell to 28%c on one day of the week, the lowest price of the year, but by Thursday it was back to 291/2c. Copper on the other hand is very steady and since that metal is frequently regarded as the leader of its class of metals this symptom is encouraging. Copper prices have been steady at 6c per pound in the home market and at 61/se for export.

The poor statistical situation was responsible for the latest decline in the lead price. Surplus stocks increased nearly 6000 tons during February following a gain of nearly 9000 tons in January.

The copper situation has apparently been gotten in hand at last. During the week it was cabled that the Belgian Government which controls the largest copper producer in the world, the Union Miniere du Haut Katanga, had agreed to join other world producers in cutting production to 20 per cent of capacity. This would mean a world production of 63,000 tons monthly, whereas present consumption is estimated at 70,000 to 75,000 tons monthly. Hence stocks which have been accumulating for several years will at last start shrinking. It is probably this realization of a better statistical position which has accounted for the firmness of copper prices when quotations of other metals were declining. Export sales have been averaging 700 tons daily at the special price of 61/8c. The so-called official quotation abroad was reduced on Thursday from 6%c to

The International Tin Committee will meet in London on April 22 to determine whether production shall be cut further. Recent output has been at the rate of 110,000 tons yearly and it is now proposed to bring this down to 100,000 tons. The restriction scheme has now been in operation for a full year and was highly successful in accomplishing its purpose.

Final production varied to the extent of only 36 tons from the set total for the year. This steadiness has been reflected by the stability of prices which have fluctuated but narrowly above and below 22 cents per pound for the past many months.

Demand for zinc has been exceedingly dull. At the start of the week the price was 2.80c per pound, East St. Louis, but before the week had progressed far sales had been uncovered at 2.75c, which coincides with the low point of the year. By the end of the week the minimum had been lifted to 2.775c.

Steel Situation Not Clear

Pittsburgh, March 28—[Special.]—The steel situation presents a rather confused aspect at the moment, for on the one hand there has been a little decrease in demand and production while on the other hand producers profess to have some orders definitely in sight which would raise the total of demand to a higher level than at any time in six months.

Steel ingot production averaged a rate of about 18,000,000 tons a year, October to February inclusive, with really little variation month by month and no general trend in the period. March opened at that rate but in the last fortnight there has been a dip to approximately 17,000,000 tons. Very light takings by the automobile industry made a hole in the general demand, but with Ford getting into production a marked increase is due for the very near future. Even with the poor automobile season now expected there should be much heavier demand in the next three months, as in ordinary times automobile production has run one-sixth heavier in second than first quarter and for various reasons the whole season is late this year.

Railroad steel buying prospects continue to improve and some actual business is now resulting. The Reading road has placed 2700 tons of fabricated structural steel for electrifying the Norristown branch, and if the Pennsylvania secures its expected loan from the Reconstruction Corporation the contract for 125,000 tons of structural steel for electrification let just a year ago will be made active. New York Central will inquire for 30,000 tons of rails for early laying, after 20,000 tons now in stock are laid, and may buy more later in the year.

Steel producers have been effecting rigid economies in an effort to cut down

overhead, when in the past the chief effort was to reduce bare tonnage costs. Conditions are greatly altered, in that plans must be based on a relatively low rate of output.

The new or stabilized prices on steel products have been regularly quoted for several weeks past, but as there have been old engagements there has been no crucial test. On an average, the new prices are slightly lower than those ruling in the very steady market that existed in the third quarter of last year.

Demand on mills for wire products, long sluggish on account of jobbers being stocked at old and lower prices, has been increasing markedly in the last fortnight, all buying being at full prices.

Favorable Prospects at Birmingham

Birmingham, Ala., March 28—[Special.]—Anticipations are keyed somewhat more encouragingly for the second quarter of the year by industrial, financial and other interests. New business is being received by melters of pig iron and fabricators of steel, and there are indications of further activity. Preparations have been made looking to speeding up production where there is some operation at present and to resumption where there is idleness. Steel fabricating shops have been active the past two weeks and longer, on backlogs in particular, and some little tonnage has come in.

Cast iron pressure pipe manufacturers have been adding to their order books for spring and other specifications are in sight, bids being placed on considerable tonnage. Iron has been purchased sparingly, however.

The pipe interests are looking forward to the meeting of the distribution division of the American Gas Association April 6-8 in this city, a feature on the program being visits to shops of the pipe companies here, the manner of production of various kinds of pipe to be shown. The Birmingham district produces upwards of 60 per cent of all cast iron pressure pipe manufactured in the United States.

Reports of more or less activity in steel fabrication have been given out recently. Virginia Bridge & Iron Company, Birmingham shop, has been operating full time, the specifications against contracts for some work for the Madden Dam project in the Panama canal zone and elsewhere calling for

early completion. This shop is also at work, as mentioned last week, on about 500 tons of steel fabrication for the dam gates and equipment on the intracoastal line between Louisiana and Texas, to be placed at Harvey, La., the Hardie-Tynes Manufacturing Co. taking the contract and to do about 700 tons of steel castings and machinery work on the job. Southern Steel Works is fabricating more than 100 tons of structural steel for an addition to the plant of the Continental Can Co. at Harvey, La., while numerous other contracts along the same line are being handled in Birmingham.

Coke production continues at about 50 per cent normal. Shipments out of the district are making a better showing than consumption in the home territory.

Steel mill operations in the Birmingham district, now estimated at 24 per cent, will probably take a jump within two or three weeks.

No changes are noted in quotations on pig iron and iron and steel scrap. Very little is moving.

Chile Buys More U.S. Machinery

The Machinery Division of the Department of Commerce announces that Chile ranked seventh in 1930 as a market for United States machinery, in-

creasing its purchases from 46 per cent in 1929 to 54 per cent of total imports. Mining machinery amounted to 97 per cent of the total. In addition American manufacturers supplied cranes and jacks, shoe making machinery, ice manufacturing equipment and other industrial machinery.

Small Business Advantage

(From the Alabama Journal)

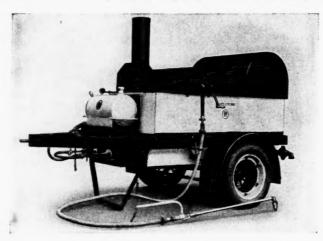
Economists are pointing out the great advantages which the small business man has when conditions are like the present. The big business man with a great plant or factory has a tremendous overhead, and such a large payroll must be carried if his plant operates that only big orders and big business justifies him in resumption. The small plant and the small business man on the other hand are in position to take advantage of every small order and to fill it promptly. He can either do the work himself or he can put only enough men to work to perform the job.

This is important at a time when everyone is buying in small lots, where no large orders are being placed in any line of industry and where so much business is being done on a hand-to-mouth scale. The small business man who is picking up orders here and there and executing them promptly and to the satisfaction of the buyer has the opportunity to put himself in a position where he will be the big business man of tomorrow.

Road Maintenance Unit

The Louisiana State Highway Department, Baton Rouge, has purchased its eighth Trail-O-Heater outfit from Little-ford Bros., Cincinnati, Ohio. The new outfit is equipped with pneumatic tires and fitted with a motor-driven spray attachment. Outfits now owned by the department are used for surface treatment, and for retread and maintenance work on state highways. Capacity of

the kettle on these units is 300 gallons. The Littleford organization for the past 32 years has cooperated with highway engineers and contractors in the development of suitable equipment for highway maintenance, manufacturing a complete line of such products; as a result, Littleford equipment is used by highway departments and contractors throughout the United States and Canada and many foreign countries.



Trail-O-Heater
Equipped
With
Motor
Spray
Attachment
and Dual
Pneumatic
Tires

Firm Bidding

The Ornamental Iron Work C_0 , Akron, O_{hi_0} ,

Editor Manufacturers Record:

I have sent your article "Fair Dealing" to the secretary of our trade association.

We have been in the miscellaneous and ornamental iron business for almost 30 years, and we have always followed the practice of quoting all contractors the same price. After the jobs were let, we have found it necessary at times, much to our regret, to be forced to cut our figure but we have only resorted to this policy in the last three or four years.

Over the past 18 months we have received less than 2 per cent of the jobs we have figured on. Our general average is 26 per cent. Consequently, we made a very complete analysis and found that in numerous cases our bid was low; but this means nothing to the general contractor. We found many cases where the general contractor had used our bid but had reduced it by 10 per cent and even as much as 20 per cent. Then when we approach him about the job and advise him that information from other sources reveals that our bid was low, he positively denies it, and not only tells you that you are high but way high, and if he keeps on shopping long enough and chiseling, he generally finds some subcontractor weakened to the point where he'll take the job for the contractor's price.

So a few weeks ago we resorted to the policy of adding to our quotation a statement to the effect that this was not our best price, and to the contractor who wanted to join with us in promising that if our bid was low at the go-in we would receive fair consideration, we should be glad to send our best price. We are happy to say that quite a number of contractors have answered, requesting this price. The significant thing about it is that very few of the contractors who have been getting the jobs during the past 18 months have answered, or have requested this lower price. The contractors that have done so have been chiefly those that were unsuccessful in securing jobs.

We received the letter and the gummed label from the contractor you refer to. All of this is going to be very helpful, and it is our opinion that the abuse has probably reached its highest point and that it should taper off from now on. Combined cooperation is what is necessary, but I suppose this is impossible.

We believe if more of the sub-contractors and contractors would get back of the proposed law, now in hands of the committee, requesting all contractors to submit a list of sub-contractors to whom they will award the contract, when the bid goes in, it would be a step in the right direction and would be very helpful in stopping this abuse so far as post office work is concerned. We think that an article from you along this line would be helpful to the general contractor and the sub-contractor who are desirous of dealing ethically with each other.

WM. A. BOESCHE, Secretary and Treasurer. Hea

March

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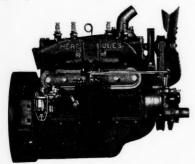
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Heavy-Duty Four Cylinder Engines

The Hercules Motors Corporation, Canton, Ohio, has announced the IX series engines and power units as an addition to their line of heavy-duty four and six cylinder engines, thus completing a range of sizes from 9 to 175 horsepower. IX series consists of two models -IXA and IXB-both four-cylinder and identical in general design, with the majority of parts interchangeable. The only difference is in the bore sizes and affected parts. Maximum torque of the IXA is 76 pounds developed at 1400 to 2400 r. p. m. and of IXB it is 90 pounds developed from 1400 to 2300 r. p. m.



Hercules IX Engine Showing Manifold Side

Both models peak at 3200 r. p. m., the IXA developing 391/2 horsepower and the IXB 461/2 horsepower at this speed. To insure sustained high speed, special attention has been given to valve cooling. Lubrication is of the full-force feed type to main bearings and connecting rod bearings; crankcase is east integral with the block; pistons are normally of cast iron and carry three rings above the pin; camshaft is on the right hand side supported by four bearings, and engines have L-head cylinders. These units are being applied to commercial vehicles. agricultural equipment, general industrial and road-building machinery, oil field apparatus and marine service.

Fast and Light Electric Cars

New bullet-type, high-speed, lightweight trolley cars recently placed in service from Fonda, Johnstown and Gloversville to Amsterdam and Schenectady, N. Y., are declared to have reduced the time of runs by 15 to 20 per cent. Weighing less than half the cars they replace, the new cars require only half as much electric power for operation, it is said, and are capable of much higher running speeds. Five cars, each weigh-

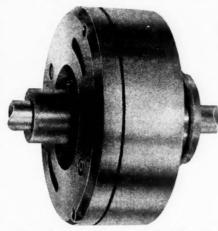
ing 42,000 pounds and seating 48 passengers, were built by the J. G. Brill Company, Philadelphia, and electrically equipped by the General Electric Company, Schenectady.

NEW AND IMPROVED EQUIPMENT

Motors are geared for a maximum speed of 60 miles an hour, each car being equipped with four 50-horsepower Type GE-301 motors, with Type K-75 control, shuntfield and line breakers. General Electric air brakes are supplied by a Type CP-27 compressor. Streamlined, long and comparatively low, with its center of gravity close to the rails, the new car is 47 feet long, equipped with air-cushioned leather covered seats. Overhead racks are provided for luggage. Indirect lighting is used and emergency battery lights are available on failure of power. The cars are one-man operated, with full safety equipment, fanoperated forced ventilation and front and rear doors are controlled by an air-

Magnetic Friction Type Clutch

To meet an increasing demand for powerful magnetic friction type clutches. the Dings Magnetic Separator Company, Milwaukee, Wis., offers a simple magnetic friction clutch having contact faces on both sides of a spring disc which are "squeezed" between the magnet and armature elements when the coil is energized. Theoretically the power transmission of this clutch is double that of a single friction contact face but actu-



Has Contact Faces on Both Sides of Spring Disc

ally it is of approximately 75 per cent greater torque with the same magnet strength, it is declared. Provision is made for adjustment to compensate for wear of contact faces. The Dings company has also developed a single spring

construction, but having three contact faces with the consequent increased torque and power transmission. In these clutches, a housing protects the slip ring brush holder assembly; coils are form wound, vacuum pressure impregnated and securely held in the magnet element, from which they are insulated, and the clutch is without projections. Clutch mounting may be reversed from the common method of in-

Fire-Resistive Vault Door

The Diebold Safe & Lock Company. Canton, Ohio, announces Style "T" Door as an addition to the Diebold Triumph line of fire-resistive vault doors. This new unit is built with a wide opening to permit passage of buses and transportable record trays and is designed particularly for service where double outside and inside doors are required for record rooms. A feature is a flush entrance from the office into the vault, facilitating the movement of record buses. Other important features are anti-warp chan-



Showing Double Outside and Inside Doors

nel reinforcing of front frame, interlocking channel on hinge side of the doors, deep box tongue of jambs and deep striker on left hand door. Style "T" Doors are adaptable for installation in vaults where wall openings are already built, or in new vaults.

Hercules-Ditwiler Spreader

In a brief description of the Hercules-Ditwiler Trailer Type spreader, as published in this department of the MANU-FACTURERS RECORD March 24, the address of the Ditwiler Manufacturing Company. manufacturers of this spreader, was given as Canton, Ohio. The main office disc clutch following the same general of the company is at Galion, Ohio.

CONSTRUCTION DEPARTMENT

Covering the initial announcements of new under-takings with additional in-formationabout enterprises previously men-tioned. The date at the end of an item indi-cates prelimi-nary facts were given in a pre-vious issue.

NEW ENTERPRISES

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice, Mail may be delayed unless complete address is given.

The Daily Construction Bulletin gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Fla., Miaml—City, reported, acquired 1729 acres of land north and west of Opa-Locka from Glenn H. Curtiss Properties, Inc., for development of present and future aviation needs; of this site United States Navy will lease 640 acres for lighter-than-air development; U. S. Dept. of Commerce recently purchased 30 acre tract east of this property for radio station.

Ga., Warm Springs—Meriwether County Comsn. supervising preliminary grading for 400 acre airport; J. H. Gray, Mgr., Atlanta Municipal Airport, making plans.

La., Barksdale Field, Shreveport—Capt. George E. Lamb, Constructing Q. M., receives bids April 25, change of date from April 4, for drainage system for flying field; cost \$100,000.

\$100,000.

Mo., St. Louis — Usona Mfg. Co., 3510
Chouto St., St. Louis, reported, has contract for 175 tons rein. steel for airport terminal building Bridgeton; Kaplan-McGowan Co., Franklin-American Trust Bldg., Gen. Contr. 3-24

N. C., Charlotte—Farrow Flying Service, Inc., capital \$100,000, incorporated; E. J. Hanson, Law Bldg.

Tenn., Memphis—Mid-South Airways, Inc., V. C. Omile, Pres., Municipal Airport, reported, plans 60x230 ft. conc., brick hangar; cost \$35,000; A. F. Hansen, Archt., Shrine Bldg.

Tex., Dallas—Dept. of Commerce, Aeronautics Branch, Airways Div., Lighthouse Service, W. S. Erwin, Ch., Div. of Purchases and Sales, Washington, receives bids April 25 for installing lighting facilities on Dallas-Little Rock section of Dallas-Louisville Airway; work includes installing about 22 standand airway electric rotating beacons together with other appurtenances and accessories between Dallas. Tex., and Little Rock, Ark., distance of 300 miles; 5 of rotating beacons will be installed at intermediate landing fields together with boundary lighting system; beacons in general to be mounted on 51 ft. or other height steel skeleton towers; certain of equipment to be furnished by Government to successful bidder at convenient railroad point or points; plans \$5.

Va., Big Stone Gap—W. H. Wren and associates, reported, interested in establishing permanent airport in Cracker Neck section of Wise County; negotiating for site 45 acre 5 miles above city; construct 2 runways of 1400 ft. and 2200 ft.; will organize company with \$10,000 capital.

Bridges, Culverts and Viaducts Proposed Construction

orida—State Road Dept. opens bids for dges. See Roads, Streets and Paving. Kentucky-See Roads, Streets and Paving.

Kentucky—See Roads, Streets and Paving.
Maryland — State Roads Comsn., L. H.
Steuart, Sec., Baltimore, has low bid from
Phillips Bros., Salisbury, for electrical work
for lighting and power system for bridge
over Pocomoke River, Snow Hill, Worcester
County, Wo-69-1-17. 3-17

Md., Baltimore—Bd. of Awards, Office of
City Register, City Hall, opens bids Apr. 6
for Kidds' School Road bridge, Mt. Carmel
Road bridge, Frog Hollow bridge and Millers Run culvert, Baltimore County; plans
\$5; George Cobb, Highways Engr.

Mississippi-See Roads, Streets and Pav-

Missouri—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, and Alton R. R. Co., A. Chinn, Ch. Engr., Chicago, Ill., authorized by State Public Service Comsn., Jefferson City, to construct conc. subway under tracks, Highway 54, near Mexico, Mo.; railroad to bear half of cost.

Missouri—State Highway Comsn. receives bids for 32 bridges. See Construction News —Roads, Streets and Paving.

Oklahoma—State Highway Comsn. receives ids for 5 bridges. See Roads, Streets and bids for Paving.

TEXAS—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, opens bids Apr. 4 for 5 bridges in following counties:

Kendall—0.485 mi. Guadalupe River bridge, consisting of 31—30-ft. 6 in. conc. deck girder spans, 22-ft.roadway, 2—52-ft. steel I-beam spans, 2—150-ft. steel truss spans, 200-ft. steel truss spans, 31 conc. pile bents, 4 open caisson type piers, and approaches, between Boerne and Comfort, FAP 631-B, Highway 9, 1.84 acres clearing, 5160 common roadway exca., 6244 cu. yd. wagon or truck haul, 450 M gal, jetting and ponding, 50 hours blading embankment, 842 cu. yd. uncl. strue, exca., 32 cu. yd. solid rock strue, excav., 1267-30 cu. yd. "A" conc. for girders and slabs, 727.85 cu. yd. "A" conc. for girders and bents, 193 cu. yd. "A" conc. plus 10% cement, 245.42 cu. yd. "B" conc., 398,116 lb. rein. steel, 680,500 lb. struc. steel for 1-beam spans, 5846 l. f. 16-in. square precast conc. railing (special), 120 cu. yd. dry rip-rap, class 1;

Ovalde—0.739 mi. Blanco River bridge, con-

piling, 1296 l. f. 18-in. same, 2090 l. f. conc. railing (special), 120 cu. yd. dry rip-rap, class 1;

Ovalde—0.739 mi. Blanco River bridge, consisting of 6—30-ft. 6-in. conc. deck girder spans, 120-ft. steel truss, 22-ft. roadway, open caisson type piers, precast conc. piling bents and abutments, and roadway approaches, between Sabinal and Ovalde, FAP 289-Reop., Unit IV, Highway 3, 6.48 acres clearing and grubbing, 27.437 cu. yd. common roadway exca., 1000 M. gal jetting and ponding, 12,577 cu., yd. overhaul, 398 cu. yd. uncl. struc. exca., 249.4 cu. yd. "A" conc. for girders and slabs, 224.38 cu. yd. "A" conc. for girders and bents, 87.36 cu. yd. "A" conc. for piers and bents, 87.36 cu. yd. "A" conc. 110.40 cu. yd. "B" conc., 110.40 cu. yd. "B" conc., 94.878 lb. rein. steel, 146.120 lb. struc. steel, 1456 l. f. intreated timber foundation piling, 1380 l. f. 16-in. square precast conc. piling, 366 l. f. conc. girder bridge over Bedias Creek from 16 to 22-ft. roadway, between Madisonville and Huntsville, 69.91 cu. yd. "D" conc., 9956 lb. rein. steel, 194 l. f. bridge railing (low type), M-17-Y-3;

Travis—887.5 ft., consisting of 4 span 8 x 8 x 36 ft. multiple box culvert and roadway approaches for eliminating dip near Fiskville, Highway 2 (M-14-S-4) and constructing 4 span 6 x 3 ft. multiple box culvert and roadway approaches for elimination of dip near Del Valle, Highway 71 (M-14-W-4), 2065 cu. yd. dry channel exca., 312 cu. yd. uncl. struc. exca., 151 cu. yd. standard gravel surface course, 292.48 cu. yd. "A" conc., 1819 lb. rein. steel (rail;

King—253 ft. large structures, consisting of Croton Creek bridge, 4—30-ft. 6 in. cone deck girder spans, 22-ft. roadway, cone spread footing type substructure and 4 miltiple box culverts, SP 845-E. Highway 4, 140 cu. yd. dry channel exca., 235 cu. yd. "4" culvert exca., 457 cu. yd. "A" bridge exca. 190 cu. yd. "C" bridge exca. 478-47 cu. yd. "4" cone. (culverts), 117.84 cu. yd. "A" cone. (culverts), 117.84 cu. yd. "A" cone. (girders and slabs), 165.51 cu. yd. "A" cone. 498.34 l. f. cone. railing (special). (See Roads. Streets and Paving, 3-24.)

Texas—State Highway Comsn. plans idges. See Roads, Streets and Paving.

Contracts Awarded

Ga., Atlanta—City, C. E. Kauffman, Engineer of Bridges, let contract to Flagle Co., Red Rock Bldg., at \$30,482, for Whitehall St. viaduct; steel beam with rein conslab, railings, brick panels, conc. piers and foundations, pavement, drains, elec. work etc.

Coal Mines and Coke Ovens

Ky., Madisonville—Chickasaw Coal Mining o., incorporated; J. D. Overall, R. Harper

Cotton Compresses and Gins

Ark., Osceola—Lee Wilson & Co., F. A. Gl-tt, Mgr., reported, will rebuild burned dy-house at McFerrin gin.

Miss., Clarksdale—H. H. Hopson, reported rebuild burned gin.

Drainage, Dredging and Irrigation

Florida—Acting Secretary of War, Freerick H. Payne, Washington, approved allotment of \$40,000 to develop channel from Apalachicola River to St. Andrews Bay, Flarpoject provides for channel 5 ft. deep, \$\frac{1}{2}\$ ft. wide and about 32 mi. long; work under the Bldg., Jacksonville.

Florida—U. S. Engr. Office, Florida Theter Bldg., Jacksonville, has low bid from Clint Moore, Delray, at \$28,322, for dredging 341,230 cu. yd. material, Intracoastal Watwav channel, Matanzas River, in vicinity of Crescent Beach bridge.

South Carolina—U. S. Engr. Office, Charles ton, opens bids Apr. 20 for dredging 31,55 cu. yd. material in mouth of Sampit Rive.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of largums of money. See that classification is details.

La., Alexandria—Louisiana Ice & Utilitis Inc., Box 1602, Frank C. Landers, V.Prs and Gan. Mgr., advises electric transmission

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line across Red River has been built; do not have any contemplated construction of this kind at present time.

3-24

Md., Wingate—South Dorchester Electric Light and Power Co. Incorporated; George W. Lindsay, Baltimore Trust Bldg., Balti-

Missouri—Empire District Electric Co., H. L. Doherty, Pres., Joplin, lately noted having applied to Federal Power Comsn. for license to develop hydro electric plant by construction of dam across White River at Table Rock in Taney County, has filed petition with Comsn. for delay of 1 yr. in issuance of permit; public hearing May 3 at Comsn. Hearing Room, Interior Bldg., Washington, on petition.

1-28

Mo., Kansas City—Kansas City Power & Light Co., reported, applied to State Public Service Comsn. for permission to Issue \$6,50,000 first mortgage \$4\frac{1}{2}\% gold bonds; proceeds to be used to reimbuse treasury for expenditures during last 5 yrs. for additions and improvements and purchase of new property for company.

erty for company.

N. C., High Point—North Carolina Public Service Co., First and Church Sts., Charlotte, subsidiary of Duke Power Co., Charlotte, reported, negotiating with city for purchase of franchise and electric distribution system.

tion system.

Va., Winchester—City, P. P. Pilcher, City
Mgr., has been directed by City Council to
make preliminary report with reference to
a possible installation of light plant to furnish current for city's own requirements.

Flour, Feed and Meal Mills

N. C., Old Fort—Sycamore Mills, Inc., Col. D. W. Adams, Pres., completed one unit of mill and contemplate development of another water power unit in near future to take care of the extension which will be necessary to add to present plant. See Want Section—Miscellaneous.

Foundry and Machine Plants

La., Ferriday—Ferriday Stove & Foundry o., reported, rebuild burned plant.

Co., reported, rebuild burned plant.

Mo., St. Louis—Vandeventer Realty Co.,
A.W. D. Weis, Pres., 2084 Maine St., Quincy,
Ill., acquired Skinner Bros. property at 1474
S. Vandeventer Ave.; machinery, inventory,
patents, trade mark, orders on hand and
other items making up business of Skinner
Bros. Mfg. Co. have been sold to Airtherm
Mfg. Co. of 1474 S. Vandeventer Ave.; Airthern Mfg. Co. will continue to manufacture
line of unit heaters developed by Skinner
Bros. Mfg. Co.; also manufacture of blow
plpe and dust collecting systems and general
sheet metal products.

3-24

Garages and Filling Stations

D. C., Washington—Martin Bros., 1341 Connecticut Ave., reported, have contract for filling station 4th and R. I. Ave., N. E., for Lord Baltimore Filling Stations, Inc.

Fla., Jacksonville—Curty and Oak Co., incorporated; A. Curty, 337 Riverside Ave.
Fla., Jacksonville—Davis Tire & Battery Co., incorporated; A. E. Davis, 119 W. Adams St.

Ky., Paducah—F. W. Katterjohn, reported, erect filling station on Broadway between 11th and 12th Sts.

Md., Baltimore — Lord Baltimore Filling Stations, Inc., reported, construct service station 1132-38 Cathedral St.

Md., Baltimore—David S. Hynes, 227 Holliday St., let contract to Lagna & Rossi, 4814 Pleasant View Ave., for addition to garage 5415 Traymore Ave.

Md., Baltimore—Harry, T. Geisendaffer, 10

Md., Baltimore—Harry T. Geisendaffer, 10 E. Lexington St., reported, let contract to John W. Cowan & Son, 17 E. Lafayette Ave., to erect filling station 114 W. 20th St.; 1 story; brick; two 10 bbl. tanks and pumps; E. C. Equipment Co., 1916 Maryland Ave., Lessee.

Md., Baltimore—Charles Neubert, 414 N.
Linwood Ave., reported, construct filling station, Oak Hill Ave. near 20th St.
Md., Baltimore—L. Baylin, 1037 N. Caroline St. reported, has contract for filling station 838 N. Gay St., for Joseph Berkowitz, 4307 Pimlico Rd.

N. C., Cherryville—Homesley Walker Auto Co., capital \$25,000, incorporated; T. C. tylles, Cherryville; G. G. Walker, Mockstylle

N. C., Farmville—Chevrolet Sales Co., Inc., capital \$50,000, chartered; B. O. Taylor, J. A. Carraway.

S. C., Marion—Boatwright Chevrolet Co. incorporated; P. J. Boatwright, W. H. Boat-wright,

Tenn., Memphis — Sears, Roebuck & Co., North Parkway and Watkins, reported, erect

super service station on south side of company' store and mail order plant, Cleveland and Autumn Aves.; irregular in shape, 130x 130 ft.; brick and stucco; 8 gasoline pumps and 3 hydraulic lifts.

Tex., Houston—Motor Mart, Inc., char-ered; Charles Boedeker, 2614 San Jacinto

Va., Alexandria—Merritt, Chapman & Scott, Fidelity Bldg., Baltimore, Md., has contract at \$100,000 for 1800 piles for foundation for assembly plant for Ford Motor Co., Detroit, Mich., Albert Kahn, Marquette Bldg., Detroit, Mich., Engrs. 2-11

Va., Petersburg—Auto Service & Storage Co., incorporated; Gray M. Smith, 28 Pine St.

Gas and Oil Enterprises

Ark., Little Rock—Mackenark Oil Co., 200 Main St., incorporated; J. B. McAnally, Hunt Bldg., Tulsa, Okla.

Bldg., Tulsa, Okla.

Ky., Paducah—Gulf Refining Co., Pittsburgh, Pa., reported, secured lease on property vicinity of Third, Broad and Elizabeth Sts., bordering on Tennessee River and Island Creek, for river terminal with facilities for loading and unloading and storing fuel.

Mo., Columbia—Missouri Utilities Co., controlled by Community Light & Power Co., Cotton Belt Bldg., St. Louis, reported, has contract for furnishing natural or mixed artificial and natural gas to city, subject to approval of State Public Service Comsn., Jefferson City. proval of son City

Mo., North Kansas City, Kansas City— Bradford Oil Co., incorporated; R. L. Brad-ford, 5001 Sunset Dr.

Okla., Seminole—Seminole Citizens Gas Co., incorporated; B. H. Chase, W. E. Harber.
Texas—Humble Oil & Refining Co., Houston, reported, acquired properties of Cullen and West in Raab Ridge, near Clear Lake oil field in Fort Bend County.

Texas—Humble Oil and Refining Co., Houston, reported, acquired holding of Starke Oil Corp., in Conroe field, Montgomery County, including 4368 acres in South Texas Development Co. tract.

Tex., Corsicana — Olsen Bros., Corsicana. reported, acquired producing properties of Humble Oil & Refining Co., Houston, in the Powell oil field.

Tex., Dallas — Amalgamated Oil Co. of Texas, incorporated; Aline Kramer, 2819 Welborn St. Tex., Fort Worth—Rhoads Drilling Co., in-corporated; C. E. Gilliham, 2024 W. Eeventh St.

Tex., Houston—Gulf Cities Natural Gas Co., Houston, reported, applied to Major Milo P. Fox, U. S. District Engr., Galveston, for permission to lay 2-in. gas pipe line across Dickinson Bayou below bed of bayou.

Tex., Houston—Refugio Gasoline Co., capital \$14,000, incorporated; J. E. Hicks, 206 Cosmos St.

Tex., Mulehoe — Consumers Oil Co., incorporated; Tom Ferris, D. O. Smith.

Tex., Houston—Alpha Petroleum Co., incorporated; Lawrence Lipper, Post-Dispatch Bidg.

Tex., Nacogdoches—Nacogdoches Producing Co., capital \$15.000, incorporated; A. T. Mast, Robert Jordan.

Tex., San Antonio—Gleason Oil Co., capital \$50,000, incorporated; L. O. Gleason, 111 Castillo St.

Tex., San Antonio — Victoria Oil Corp., capital \$32,000, incorporated; C. B. Bunte, George W. Murry, Ernest B. Rubsamen, Jr., Majestic Bldg.

Tex., Tyler—Urania Oil and Pipe Line Co., incorporated; R. F. Coorpender, C. L. Harra-

Ice and Cold-Storage Plants

Ark., Newport—Home Ice Co., B. J. Best, purchased Cook strainer and 150 gal. per minute Cook self olling deep well turbine pump from Carloss Well Supply Co., 115 Concord St., Memphis, Tenn.

Tex., Hitchcock—J. J. Harpey, reported, acquired from South Texas Utilities Co., Galveston, ice manufacturing plant at Hitchcock, and cold storage and refrigeration plants at Hitchcock, Alta Loma, Arcadia and Algoa.

Land Development

Fla., Gainesville—Phifer Investment Co., incorporated; J. A. Phifer, H. L. Phifer, Fla., Jacksonville—Grove Property Corp., incorporated; Leonard Finkelstein, 2505 Forbes St.

Fla., Lake Placid—Lake Placid Co., Inc., chartered; E. D. Treadwell, R. McElya. Fla., Melbourne - Midwood Investments, Inc., chartered; F. W. Brecht, M. A. Brecht, D. Peel.

Fla., Tampa—March Investments Co., incorporated; F. L. Cowles, 109 E. Lafayette.

Fla., West Palm Beach—D. L. Brandon, Inc., chartered; D. L. Brandon, 725 Valley Forge Rd.

Md., Baltimore — Fireside Realty Co. of Baltimore City, Inc., 1515 N. Fulton Ave., incorporated; Albert J. Curran, Edw. L. Parlett, Willis A. Myers.

Mo., Kansas City—Geha Building & Investment Co., incorporated; A. H. Geha, 3741 Forest St.

N. C., Southern Pines—H. H. Beckwith, Knollwood, will develop Homewood; plans and supervision by E. S. Draper, Landscape Archt., 1522 E. Fourth St., Charlotte; work to consist of improvement to grounds, water system, garden development and planting; Wm. C. Holleyman, Jr., Archt., North Carolina Bank Bldg., Greensboro.

S. C., Chester—Chester Realty and Investment Co. incorporated; M. R. Clark, John G. White.

Tex., Dallas—Olleyd. D.

Tex., Dallas—Oiland Development Co., incorporated; Dan P. Johnston, Linty Bldg.
Tex., Houston—Fidelity Land Co., incorporated; W. W. Moore, Jr., Petroleum Bldg. Tex., Houston — Golden Gate Cemetery orp., incorporated; Frank B. Browne, 1907

Tex., Mission—J. B. Coulter Co., capital \$25,000, incorporated; J. B. Coulter, James H. Cowan.

Tex., San Antonio—Kago Co., Inc., chartered; R. O. Kipp, 1911 Gramercy St.
Va., Norfolk—Ford Park Realty Co., capital \$25,000, incorporated; Charles Webster, 402 W. Freemason St.

W. Va., Beckley-Equitable Holding Co., capital \$50,000, incorporated; W. A. Stanley, K. M. Jarrell.

Lumber Enterprises

Arkansas—T. J. Gillstrap, Coffeyville, Kan., reported, acquired lumber yards of Ferguson Co., at Fayetteville, Van Buren and Bentonville; will operate under name of T. J. Gillstrap Lumber Co.

Metal-Working Plants

Tex., Houston—Shudde Mfg. Co., incorporated; A. J. Shudde, 4510 Woodside St.; metal products.

Mining

Ga., Chatsworth—Moss Chemical Co., Masonic Bldg., Crawford St., Dalton, re-organization of company formerly located in Atlanta, developing tale deposits in Murray County; completing plant; all construction under supervision of J. O. McCutcheon, Ch. Engr.; equipment to be installed includes motors, pumps, and mixing vats. etc.; Georgia Power Co., Atlanta; Tarror Lumber Co., and Pauly Jail Works, both Dalton, Equip. Contrs. (See Want Section—Machinery and Supplies.)

Mo., Neosho—Todd Land Corp., Webb City, reported, developing limestone quarry; produce crushed limestone.

N. C., Marble—A. H. Wood, Johnson City. Tenn., and associates, reported, leased gold mine on Valley River; install machinery and operate.

operate.

N. C., Warne—J. H. Abernathy and J. B. Moore, Andrews, reported, develop gold mine at Warne, 15 miles south east of Murphy on Brasstown Creek, near Georgia State line; installing machinery.

W. Va., Industrial—C. H. Bibbee, Mgr., Russell Coal Co., Clarksburg, reported, completed preliminary plans for construction of limestone plant.

Miscellaneous Construction

Miscellaneous Construction

Arkansas-Mississippi—U. S. Engr. Office, P. O. Box 667, Vicksburg, Miss., opens bids Apr. 12 for 5,584,700 cu. yd. earthwork, east and west banks Mississippi River, designated as follows, by item number, miles below Cairo, kind of work, length, estimated cu. yd., average height (net): East Bank, Mississippi River in Mississippi—Princeton New Levee and Enlargement: 515L-A, 515-L, new, 9547.5 ft., 960,500, 21.5 ft.; 515L-B, 515-L, new and enlargement; 5770.4 ft., 466,550, 25.0 ft.; Valewood to Mayersville New Levee and Enlargement; 533-L-A, 533-L, riverside enlargement, 6000 ft., 334,500, 24 ft.; 533L-B, 533-L, constructing turnover, 8000 ft., 950,000, 25 ft.; 533-L-C, 533-L, riverside enlargement, 60413 ft., 266,000, 24 ft.; west Bank, Mississippi River in Arkansas—Above Grand Lake New Levee; 510R-A, 510-R, new, 6556.5 ft., 797,600 cu. yd., 26 ft.; 510R-B, 510-R, new, 6374.6 ft., 810,600, 25 ft.

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o., F. A. Gl-burned dryon, reported Irrigation

War, Fred-proved allot-hannel from 's Bay, Fla.: ft. deep, 65 work under lorida Thetlorida Thet-

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Power

ers, V.-Pres transmission

D. C., Washington—Jos. L. Booze & Co., 12 W. Madison St., Baltimore, Md., has contract for brick work in connection with Georgetown incinerator of Dist. Cmmrs.; North-Eastern Construction Co., Gen. Contr., 6 W. Madison St., Baltimore. 2-25

Missouri—U. S. Engr. Office, St. Louis, has low bid from M. A. Wogan, 511 Ry. Exch. Bldg., Kansas City, at \$84,688, for 3400 l. f. standard pile clump dikes. Missouri River, Marthasville Bend, Mile 73 to 78.

Okla., Oklahoma City—City, M. Peshek, Clk., has plans for \$18,000 wading pool, Glen Ellen Park; L. M. Bush, Engr., City Hall.

Okla., Oklahoma City—City, M. Peshek, Clk., has plans for \$18,000 wading pool, Glen Ellen Park; L. M. Bush, Engr., City Hall.

Tenn., Memphis—U. S. Engr. Office, P. O. Box 97. opens bids Apr. 21 for approx. 18,-761,000 cu. yd. earthwork, St. John's Bayou Levee and Lower St. Francis, White River, and Upper Yazoo Levee Districts, with yardage of 910,000, 1,205,000, 3,158,000, and 13,488,000, respectively, designated as follows by item number, river mile below Cairo, kind of work, length (feet), est. total cu. yd., net height (feet): St. John's Bayou Levee: R. 714, 71R, enlargement, 13,293, 362,000, 10 to 26; R.71B, 71R, enlargement, 12,155, 548,000, 15 to 28; lower st. Francis Leeve Dist.: R.143A, 143R, new, 6800, 470,000, 16-22; R.143B, 143R, new, 6800, 470,000, 16-22; R.143B, 143R, new, 6800, 470,000, 16-22; R.143B, 143R, new, 7624, 475,000, 14-20; R.143B, 143R, new, 3616, 500,000, 25 to 29; R.319A, 319R, new, 3616, 500,000, 24 to 28; R.319B, 319R, new, 3616, 500,000, 24 to 28; R.320A, 320R, new, 3200, 480,000, 25 to 28; R.320B, 320R, new, 3200, 480,000, 26 to 28; R.321B, 321R, new, 3116, 500,000, 26 to 31; R.321B, 321R, new, 3941, 500,000, 18 to 31; Upper Yazoo Levee Dist.: L.260A, 260L, new, 5800, 606,000, 20.32; L.263A, 263L, new, 5800, 606,000, 20.32; L.263B, 263L, new, 5800, 606,000, 21 to 26; L.263C, 263L, new, 5800, 606,000, 21 to 26; L.263C, 263L, new, 5800, 606,000, 21 to 26; L.263B, 263L, new, 5800, 606,000, 20.32; L.263B, 352L, new, 2600, 355,000, 28.35; L.353B, 353L, new, 2600, 535,000, 28.35; L.353B,

Tex., College Station—Texas A. & M. Col-ege start work at once on \$60,000 swimlege start work at once on \$60.000 swin ming pool; 100x60 ft., 3½ to 10 ft. dee contain approx. 281.000 gal. when filled, line with tile, surrounded with tile runway; pobuilding, 127x100 ft.; Dr. F. E. Gieseck College Archt. See Building News—Schools.

Va., Great Bridge—Frank D. Beckl Chief, Administrative Div., U. S. Engr. O foot of Front St.. Norfolk, advises invite for bids for driving mooring piles and nishing and driving fender piles was v drawn and no bids were received. Beckham.

Va., Langley Field, Hampton—Constructing Quartermaster has low bid from Alsop & Pierce, Newport News, for seawall extension.
3-17

Miscellaneous Enterprises

Ark. Dardanelle—Blue Valley Creamery Co., 1137 W. Jackson Blvd., Chicago, Ill., reported, leased S. E. Miller Auto Co. Bldg. N. Front & Quay Sts.: establish creamery with annual capacity of 2,000,000 lbs. butter; install \$35,000 machinery and equipment, including electric churns, 2 pasteurizers, washing machines, storage vats, 7 electric motors.

Ark., Van Buren-Kaylor Cheese Co., Vese Kaylor, Pres., has building; will install or 2 10,000-lb. cooking vats; daily output 1 or 2 10,000-1b. 1000 lbs. cheese.

Fla., Daytona Beach—George A: Main, 112 Marion St., has perfected process for bot-tling and canning juice of coquina clams; may purchase special machinery and establish plant.

Fla. Indian Rocks—Harry D. Ulmer will rebuild burned citrus packing plant; fire-proof construction. 3-17

Fla., Jacksonville—Coastal Electrotype Co., incorporated; O. R. Turner, 135 E. Fourth

Fla., Miami — Nichols Damp Proof Salt Shaker Co. incorporated; J. C. Nichols, 553 N. E. 65th St.

Fla., Miami — Miami Dairy Farms, Inc., chartered; P. C. Taylor, Congress Bldg.

Fla., Miami—Williams Novelty Co., incor-orated; J. H. Lathero, Olympia Bldg.

Fla., St. Cloud—Ideal Bakery, Inc., chartered; R. C. Peterson, E. Goetha.
Fla., Tampa—Preferred Havana Tobacco Co., J. M. Diaz, Pres., New York, operating factory of Bustillo Bros. & Diaz, will manufacture Eden cigars, formerly manufactured in Havana.

Ga., Atlanta—F. J. Cooledge & Sons, 12 Forsyth St., leased building Murphy Ave. and 12 acres land, will use for paint factory and glass distribution warehouse; will improve.

Ky., Ludlow—Carran Bearing Metal Co., capital \$100.000, incorporated; J. A. Lind, W. F. Waugh.

Ky., Louisville—American Suppliers, Inc., subsidiary of American Tobacco Co., reported, erect 2 warehouses Bernheim Lane, each 200x160 ft.; steel construction; conc. base; cost \$150,000; Fiske-Carter Construction Co., Greenville, S. C., Contrs.

Ky., Middletown — Peddy Pharmacal Cocapital \$100,000, incorporated; Thomas Fisher, Lawrence W. Wetherby.

Ky., Princeton—Leader Publishing Co., capital \$15,000, incorporated; J. R. Catlett, S. O. Catlett.

Ky., Somerset—Phelps Construction Co., capital \$100,000, incorporated; D. M. Phelps,

Capital \$100,000, incorporated; B. M. Fileips, Jr.; Joe H. Gibson.

Md., Baltimore—State Hand Laundry, Inc., 655 W. Fayette St., incorporated; Charles B. Bishop, 1803 Bolton St.

Md., Baltimore—Grace Press, Inc., 204 W. Redwood St., incorporated; Aaron J. Verlen, Industrial Bldg.

Md., Baltimore—Glen-Ellen Building Corp., 3200 Dura St., incorporated; Ralph Bolgiano, 11 E. Pleasant St.

Md., Baltimore — Roselawn Building (622 Munsey Bldg., incorporated; Byron Holland, Samuel Sperandeo.

Holland, Samuel Sperandeo.

Md., Baltimore—Cogswell Construction Co., 406 Park Ave., reported, has contract for ice cream plant addition, 2336 E. North Ave., for Eckels Ice Cream & Dairy Co.; McCormick Co., Inc., 1121 S. Negley St., Pittsburgh, Pa., 3-10

Md., Hagerstown—Hankey Ice Cream Co., incorporated; I. Lee Hankey, Edw. M. Bearin-

Md., Mt. Airy—G. E. Roop, New Windsor, reported, acquired Superior Ice Cream Co.; will install Diesel oil engine; increase ice manufacturing capacity to 16 tons daily and 11,000 gal. ice cream.

11,000 gal. ice cream.

Miss., Biloxi—Currie & Corley, Raleigh,
Miss., has contract at \$35,500 for erecting
building for Ness Creameries, Howard Ave.,
R. T. Boteler, Sec., Jackson; 45x115 ft.;
brick; conc. and tile floors; built-up comp.
roof; Helfensteller, Hirsch & Watson, Archts.,
1501 Chemical Bildg., St. Louis, Mo.; Carl
E. Matthes, Constr. Engr., Biloxi; Biloxi
Plumbing & Heating Co., contract for heating, power plant and plumbing. 3-24
Miss., Laurel—Laurel Hoe Works, incorporated; C. H. Poythress, P. B. Poythress,

Mo. Kapens City, Specialty, Optical, Co.

Mo., Kansas City—Specialty Optical Co., Dr. John D. Brock, Pres., leased additional space in building, 1009-17 McGee St., over present location for expansion; manufactures optical goods.

Mo., Kansas City—Interstate Contracting Co., incorporated; R. A. Edlund, 5520 Brook-lyn St.

Mo., St. Louis—National Lighting Protec-on Co., incorporated; Ernest C. Rea, 5423

Mo., St. Louis—Keystone Products Co., in-corporated: Edw. H. Maurice, 4105 Washing-ton St.; advertising novelties.

N. C., Albemarle—Albemarle Coca Cola Co., capital \$100,000, incorporated; P. O. Skidmore; probably erect bottling plant.

N. C., Durham—Wright-Dalton Machinery Co., capital \$450,000, incorporated; R. H. Wright, T. D. Wright, J. T. Dalton.

N. C., Durham—Farmers Mutual Exchange, erect poultry house and cold storage plant, capacity a freight car load of live poultry; construct side tracks.

N. C., Garysburg—Carolina Cotton and Land Co., incorporated; J. Winfield Crew, Jr., Garysburg; W. L. Long, Roanoke Rapids. N. C., Winston-Salem—Modern Laundry, Inc., chartered; R. G. Zimmerman, 2108

Queen St.

Okla., Oklahoma City — Hunter Printing Co., incorporated; Joel C. Bates, American Natl. Bank Bldg.

Tenn., Chattanooga—Kory Shoe Co., I chartered; Lou Effron, 198 S. Crest Rd.

Tenn., Lawrenceburg—City erecting building to be occupied by Salant & Salant, Inc.,

Shirt Mfrs., 476 Knickerbocker Ave., New York.

Tenn., Nashville — Interurban Water (0,, capital \$50,000, incorporated; E. P. Radabaugh, 3512 Bayou St.

Tex., Dallas—Ace Roofing and Supply Co., incorporated; B. L. Smith, 5626 Worth St.
Tex., Denton—W. L. Dungan & Son and H. L. Dungan, Ennis, reported, acquired Denton Steam Laundry; operate as Denton Laundry and Dry Cleaning Plant.

Tex., Port Worth—Claud Cross Co., Inc., chartered; Claud Cross, F. L. Mothers; printing and publishing.

g and publishing.

Tex., Houston—I. C. Sales Mfg. Co., capi.

1 \$25,000, incorporated; Geo. E. Thomas,

D. McNeill; ice cream vending machines.

Tex., Houston—Rosenfelder Machinery Co., Inc., 6416 Navigation, increased capital \$40,000 to \$65,000.

Tex., Houston — Joseph Finger, Arc Natl. Standard Bldg., preparing plans construction 2 story, rein. conc. plant Gray St. for Sanitary Farm Dairies, I. A. J. Riedel, Sec., 2728 Washington S5x110 ft.; install all new equipment, cluding bottle washing, sterilizing and pteurizing equipment, testing laboratory refrigeration; install own ice making me Tex. Orange—Commercial Pulp. and Dec.

Tex., Orange—Commercial Pulp and Paper Co., Texas corporation, Sumner M. Bump. Pres., recently organized to take over properties of Yellow Pine Paper Mill Co., has completed deal: will expend \$75,000 on improvements: will manufacture all types of high grade paper using wood pulp, and rice straw: raw materials to be acquired in gulf coast area of Texas and Louisiana; works under direction of C. A. Kiren, Engr.

Tex., San Antonio—S. E. Knowlton Creamery, 1415 W. Summitt Ave., reported, begin construction of \$40,000 creamery on Fredericksburg Rd. north of Martinez Creek and extending to Parkmoor Drive: front of plant will contain reception room, ladies rest room; Adams & Adams, Archt., Western Natl Bldg.

Va., Clarendon — Triangle Improvement Corp., chartered; H. L. Woodward.

Va.. Covington—Covington Printing Co. capital \$25,000, incorporated; Ewel G. Kin-

Va., Harrisonburg—Carroll Theatre, Inc., capital \$50,000, incorporated; Carroll Mene-

Va., Norfolk—Mirabella and Febro, Inc., capital \$50,000. incorporated; V. J. Mirabelle, 1619 Morris Ave.; ornamental plaster-

Va., Pace—Carlbrook Dairy Farms, Inc., incorporated; L. E. Carlton.

W. Va., Bluefield—Dixie Advertising Co., incorporated; Myles R. Foland, 2021/2 Bland

Motor Bus Lines and Terminals

Fla., Jacksonville — Boyette Air Electric ar, Inc., chartered; F. L. Poor, Professional

Railways

Mo., St. Louis—Wabash Ry. Co., E. L. Crugar, Ch. Engr., reported, expend \$16,800,000 for maintenance, additions and betterments to property; secured funds from Reconstruction Finance Corp.; program calls for laying 70 mi. rail, 600,000 ties, 410,000 yd. additional ballast and maintenance of equipment.

Mo., St. Louis—Southern Pacific Co., P. Shoup, Pres., San Francisco, Calif., authorized by Interstate Commerce Comsn., Washington, to take over control of St. Louis Southwestern Ry. Co., D. Upthegrove, Pres. St. Louis.

Roads, Streets and Paving

In connection with LAND DEVELOP-MENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Ark., Fort Smith—Fort Smith Dist., Sebastian County, W. L. Winters, Engr., opens bids Apr. 5 for approx. 0.5 mi. 18-ft. concavement and macad. shoulders, including fine grading.

FLORIDA—State Highway Comsn., H. H. Wells, Chmn., Tallahassee, opens bids Apr. 4 for road and 2 bridge projects in following counties:

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March 31, 1932

Duval—0.67 mi. clearing, grubbing, lime rock base and surface treatment, between Road No. 3 and Camp Clifford R. Foster, Proj. 1090, Road 169.

Hendry—11 standard conc. box culverts and 4 two span bridges and 1 three span bridge of 25 ft. steel I-beam spans with conc. deck on crfeosoted timber piling, Proj. 805, Road 25;

Hardee—five 43-ft. conc. deck girder spans on conc. piers, approx.

Road 25; Hardee—five 43-ft. conc. deck girder spans on conc. piers, approx. 217 ft., Proj. 977-B, Road 32.

Georgia—State Highway Bd., J. W. Barnett, Chmn., Atlanta, has low bid from Campbell Contracting Co., Columbus, at \$25.667, for 14.697 ml. surface treatment, Eastman-McRae road, Eastman to Dodge-Telfair County line, Proj. 824 (G-6-90), Dodge Coun-3.10

Georgia—State Highway Bd., J. W. Bar-nett, Chmn., Atlanta, opens bids Apr. 5 for stone in Forsyth County on Alpharetta-Daw-sonville road, Fulton County line to Cum-mings, SAP 23, Forsyth County, 21,953 tons 2½-in. down; 9443 tons 1½ in. to ½ in.; 1267 tons ¼ in. to 10 in. mesh.

Georgia—State Highway Bd., J. W. Barnett, Chmn., Atlanta, reported, plans 2 paving projects, 17 mi., Fulton county, costing \$750,000, including repaving and partial widening of Lee St., and paving highway, Roswell through Alpharetta to Forsyth County line.

Kentucky—State Highway Comsn., Ben Johnson, Chmn., Frankfort, repected bids for 5.718 mi, surfacing, Beech Grove Eastwood Ferry road, Beech Grove to near Green River at Eastwood Ferry, S. P. 2½ CS. McLean County.

KENTUCKY — State Highway Comsn., Frankfort, opens bils Apr. 13 for 8 roads and bridge in following counties:

Caldwell-Trigg—10.880 mi. 24 to 30-ft, grading, draining, Princeton-Gracey road, Tandys Cross Roads to Cerulean, 96.11 acres clearing and grubbing, 81,140 cu. yd. uncl. toadway exca., 1906 cu. yd. uncl. borrow exca., 920 cu. yd. uncl. struc. exca., 2300 cu. yd. dry common struc. exca., 1310 cu. yd. wet oxed., 220 cu. yd. wet rock struc. exca., 2260 cu. yd. wet rock struc. exca., 2260 cu. yd. wet rock struc. exca., 221. f. remove pipe, 40 1. f. relaid pipe, 404 1. f. 15-in. corr. metal pipe, 48 1. f. 24-in. same, 2368.76 cu. yd. "A" conc., 335.910 lb. rein. steel. 4024 lb. broze expansion plates, S. P. 280 B- Gand S. P. 280 A-G;

Fleming—10.857 mi, 18-ft. surfacing, Flemingsburg to Nieholas County line, 18.-800 cu. yd. uncl. roadway exca., 800 cu. yd. uncl. brorow exca., 20 cu. yd. uncl. struc. exca., 9677 cu. yd. uncl. trench and shoulder exca., 92 1. f. 15-in. corr. metal pipe, 30 1. f. 18-in. first cl. pipe, 30 1. f. 24-in. same, 8.5 cu. yd. "A" conc., 100 cu. yd. rip rap: Alt. types surfacing: Rein. conc.—116.116 sq. yd. conc.; or rock asphalt-waterbound macad. base, 53,261 tons crushed limestone, 5529 tons cold lay sheet asphalt; or bitum macad. type 1-waterbound macad. base, 53,261 tons crushed limestone, 12,902 tons Amiestic; or rock asphalt-waterbound macad. base, 46,355 tons crushed limestone, 12,902 tons Amiestic; or rock asphalt-waterbound macad. base, 46,355 tons crushed limestone, 12,902 tons Amiestic; or rock asphalt; or cold lay sheet asphalt; or litum. ma

grubbing, 27,640 cu. yd. uncl. roadway exca., 504 cu. yd. uncl. borrow exca., 350 cu. yd. dry common strue. exca., 160 l. f. 15-in. corr. metal pipe, 16 l. f. 24-in. corr. metal pipe, 16 l. f. 24-in. corr. metal pipe, 251 l. f. 18-in. first cl. pipe, 36 l. f. 24-in. same, 956,21 cu. yd. "A" conc., 101 cu. yd. "D" conc., 126,110 lb. rein. steel, 8P 1 E-G; Nicholas—5.840 mi. 18-ft. surfacing, Carlisle-Flemingsburg road, corporate limit of Carlisle to end of graded road approx. 1 mi. east of Myers Station, 1300 cu. yd. uncl. roadway exca., 200 cu. yd. uncl. borrow exca., 25 cu. yd. uncl. strue. exca., 5284 cu. yd. uncl. trench and shoulder exca., 484 l. f. 15-in. corr. metal pipe, 54 l. f. 18-in. first cl. pipe, 27 l. f. 24-in. first cl. pipe, 11.8 cu. yd. "A" conc.; Alt. types surfacing: Rein. conc., 63,405 sq. yd.; or rock asphalt-waterbound maead. base, 34,566 tons crushed limestone, 3019 tons rock asphalt on cold lay sheet asphalt waterbound macad. base, 34,566 tons crushed limestone, 3019 tons cold lay sheet asphalt; or bitum. macad. type 1: or Amiesite waterbound macad. base, 30,795 tons crushed limestone, 7045 tons crushed limestone, 7045 tons crushed limestone, 7045 tons Amiesite; or rock asphalt-surface mix binder-waterbound macad. base, 33,355 tons crushed limestone, 703 tons crushed limestone chips, 12,681 gal. light tar for prime coat, 44,384 gal. medium tar for binder or 50,724 tons asphalt; or cold lay sheet asphalt-surface mix binder-waterbound macad. base, 33,365 tons crushed limestone chips, 12,681 gal. light tar for prime coat, 44,384 gal. medium tar for binder, 793 tons crushed limestone chips, 12,681 gal. light tar for prime coat, 44,384 gal. medium tar for binder or 50,724 tons asphalt cur-back for binder, 2882 tons codd lay sheet asphalt. Sq 43 A-8; 3.116 mi. 24 to 30-ft. grading, draining. Carlishe-Flemingsburg road, end of graded road about 1 mi. east of Myers Sta. to Fleming County line, 26.25 acres clearing, grubbing, 51,586 cu. yd. uncl. roadway exca., 379 cu. yd. uncl. exca., 2870 cu. y

Rec. 266 A2-8.

Louisiana—State Highway Comsn., H. B. Henderlite, Highway Engr., Baton Rouge, advises: Now engaged in survey between end of Rigolets bridge and Pearlington, Miss.; location of road will be an almost straight line between these 2 points, and cost of construction est. approx. \$1.230.000; at present time it is probable that construction will not begin on project within year or more.

more.

3-24

MARYLAND—State Roads Comsn., L. H. Stuart, Sec., Baltimore, opens bids Apr. 5 for 5 roads in following counties:

Baltimore—3.10 mi. macad. resurfacing. Old Court road, end B-57, Granite, toward Liberty road, B-191-42;

Cecil—0.33 mi. conc., proposed Elkton Blyd. Bridge St. to Blueball road, Ce-77, 3-23; 2.62 mi. conc. Blueball road, Elkton Blyd. bridge St. to Blueball road, Elkton Blyd. toward Childs, Ce-83-32;

St. Mary's—0.93 mi. gravel, Indian Bridge road, from point on Leonardtown-Great Mills road near Great Mills toward Gleeb's School, SM-90-82;

Wicomico—2.00 mi. conc., Salishury, Powell

road near Great Mills toward Gleeb's School, SM-90-82; Wicomico—2.00 mi. conc., Salisbury-Powellville road, end Wi-63 toward Powellville, Wi-89-12, FAP 249-A.

MARYLAND—State Roads Comsn., L. H. Steuart, Sec., Baltimore, has low bids for 3 roads in following counties:

Anne Arundel—2.06 mi. gravel, Deale-Nutwell road, end AA-48 at Deale to Mt. Zion-Prince Frederick road, 575 bbl. cement required, AA-123-82, L. R. Culbert, Fredericksburg, Va., 817,475;

Baltimore—1.19 mi. conc., Toyer road, end B-183, 1.0 mi. north of Shepperd to Harford County line, 3550 bbl. cement required, B-242-44, Harry T. Campbell Sons Co., Towson, 814,044;

Washington—1.72 mi. macad. and macad.

242-44. Harry T. Campbell Sons Co., 10w-son, \$14,044;
Washington—1.72 mi. macad. and macad. resurfacing, Leitersburg-Chewsville road, 60 bbl. cement required, W-108-64, T. Edgi Russell Co., Frederick, \$25,138.

3-17
Mississippi—State Highway Comsn., C. M. Williamson, Dir., Jackson, opens bids Apr. 5 for 6.402 mi., Meridian-Macon road, Lauderdale County, FAP 107-C; roadway, clearing and grabbing, 39,618 cu. yd. common

exca., 88,770 cu. yd. borrow exca., 487,93 cu. yd. "A" conc., 20,80 cu. yd. "C" conc., 50,797 lb. rein. steel, 462 l. f. 18-in. culvert pipe, 3,60 mi. Bermuda sodding, 92 row markers; bridges, 601,64 cu. yd. "A" conc., 125,159 lb. rein. steel, 910 lb. struc. steel, 546 l. f. conc. railing, 62 cu. yd. rip rap, 3528 l. f. untreated foundation piling.

Missouri-State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, opens bids Apr. 8 for hauling gravel in various counties.

Apr. 8 for hauling gravel in various counties.

MISSOURI—State Highway Comsn.. T. H. Cutler. Ch. Engr., Jefferson City, opens bids Apr. 7 for 64 roads and 32 bridges in following counties:

Andrew—3.560 mi., 3.583 mi. 20-ft. conc., St. Joseph-Union Star, 30,062 cu. yd. earth. 341 cu. yd. rock, 49 cu. yd. conc. in culverts, 83.813 sq. yd. pavement, 315-E, 315-F;

DeKalb—4.023 mi., Union Star-Route 31, 28.93 mi. Gentry County-Route 31, 12.7.0 cu. yd. earth, 25 cu. yd. rock, 10 cu. yd. conc. in culverts, 64,108 sq. yd. pavement, 315-G, 247-A;

Daviess—3.295 mi., 3.357 mi., 10-ft. conc., Altamont-Gallatin, 8701 cu. yd. earth, 17 cu. yd. rock, 39,902 sq. yd. pavement, 6-14B, 6-15A;

Adair—2.20 mi. gravel, Novinger-Kirks-

Adair—0.220 mi. gravel, Novinger-Kirks-ville, 6339 cu. yd. earth, 238,000 lb. strucsteel, 212 cu. yd. pavement, bridge over Chariton River, 4 40-ft. I-beams, 1 140-ft. truss (timber). 6-40;

Grundy—3.750 mi., 1.846 mi. gravel, Route 6-Laredo, 24,404 cu. yd. earth, 19 cu. yd. conc. in culverts, 79 cu. yd. conc. in bridges, 19,220 lb. struc. steel, 4633 cu. yd. pavement, double box bridge, and bridge over Crooked Creek, 2 19-ft., 1 31-ft. I-beams, SM-1, SM-2; Mercer—5.000 mi. graded earth, Route 65-Harris, 32.970 cu. yd. carth, 23 cu. yd. conc. in bridges, 35-ft. I-beams; Randolph—4.285 mi., 4.983 mi., 2.525 mi., 10 andw 20-ft. conc., 10 ft. conc. and 10-ft. conc., Macon-Moberly, 25,571 cu. yd. earth, 102 cu. yd. conc. in culverts, 717-70 sq. yd. pavement, 266-A, 266-B, 266-C; Miller—3.174 mi. gravel, Eldon-Tuscumbia, 21,757 cu. yd. earth, 2310 cu. yd. pavement, 25-48; Moniteau—4.544 mi. 20-ft. conc.. Cooper County-Moniteau County, 3,510 mi., 10 73 mi.

52-48;
Moniteau — 4.544 mi. 20-ft. conc., Cooper County-Moniteau County, 3.510 mi., 1.073 mi., 4.886 mi. 4.912 mi. same, Morgan County-California, 3.721 mi., 3.606 mi. same, California-Cole County, 142,446 cu. yd. earth, 2288 cu. yd. rock, 307 cu. yd. conc. in culverts, 40 cu. yd. conc. in bridges, 257,152 sq. yd. pavement, bridge over branch, widen 2 20-ft. slabs, 327A, 327B, 327C, 327D, 327E, Oscar 4.745 mi.

sq. yd. pavement, bridge over branch, widen 2 20-ft. slabs, 327A, 327B, 327C, 327D, 327E, 327F;

Osage—4.745 ml. gravel, Westphalia-Meta 12,082 cu. yd. earth. 1084 cu. yd. rock, 4470 cu. yd. pavement. SM-2;

Cedar—0.134 ml. bridge, Stockton-Fair Play, 1745 cu. yd. conc., 64-8; 3.911 ml., 3.930 ml., 3.807 ml. gravel, Eldorado Springs-Collins, 104.229 cu. yd. earth, 556 cu. yd. conc. in culverts, 601 cu. yd. conc. in bridge over Sac River, 13-40 ft. continuous deck girders. 1-150 ft. arch, bridge over Camp Branch, triple box, 2 double boxes, 54AP-82; 54AP-83; St. Clair—bridge, Eldorado Springs-Collins, 1034 cu. yd. conc., 533.500 lb. struc. steel; 3.583 ml., 3.707 ml., 3.499 ml., 2.967 ml. gravel. Eldorado Springs-Collins, 1034 cu. yd. conc., 533.500 lb. struc. steel; 3.583 ml., 3.707 ml., 3.499 ml., 2.967 ml. gravel. Eldorado Springs-Collins, 191. cu. yd. conc. in culverts, 697 cu. yd. conc. in bridges, 16,757 cu. yd. pavement, bridge over Coon Creek, 3 30-ft. slabs, bridge, Little Weaubleau Creek, 5 40-ft. deck girders, 54AP-84, 54AP-85, 54AP-87, 54-88;

Webster—0.605 ml. 20-ft. conc., Marshfield Spur, 2742 cu. yd. earth, 38 cu. yd. earth, 69-94 ml., 2.69 ml., 2.121 ml. gravel, Route, 528 cu. yd. earth, 2310 cu. yd. earth, 1019 cu. yd. rock, 5183 cu. yd. pavement, 8B-3, 8A-4;

Dent—4.926 ml., 2.869 ml., 2.121 ml. gravel, Route 32-Montauk Park, 12,628 cu. yd. earth, 2310 cu. yd. rock, 46 cu. yd. conc. in bridges, Creek, triple box, 119AP-1, 119AP-2, 119AP-3A;

Ozark—3.326 ml., 3.581 ml. gravel, Thornfield-Long Run, 63 255 cu. yd. earth, 16 274

Creek, triple box, 119AP-1, 119AP-2, 119AP-3A;
Ozark—3.326 mi., 3.581 mi. gravel. Thornfield-Long Run, 63,255 cu. yd. earth, 16,274 cu. yd. rock, 120 cu. yd. conc. in culverts, 560 cu. yd. conc. in bridges, 560 cu. yd. conc. in bridges, 250,000 lb. struc. steel, 4619 cu. yd. pavement, bridge, Little North Fork White River, 4 47-ft. 1-beams, 1 100-ft. truss, bridge over Pond Fork, 2 47-ft. 349-ft. I-beams, double box bridge, 95-4, 95-5;
Howell—70.5 ft. bridge, West Plains, over Howell Valley, 2 14-ft. slabs, 1 25-ft. deck girder, SC-1A;
Cape Girardeau—3.859 mi. gravel. Route 25-Scott County, 10,141 cu. yd. earth, 3637 cu. yd. pavement, SP-1;
Pemiscot—4.236 mi. gravel. Route 61-Braggadocio, 2.563 mi. same. Braggadocio-south, 6118 cu. yd. earth, 4301 cu. yd. pavement, SN-1, SZ-1;
Stoddard—3.887 mi., 1.662 mi. 20-ft. conc.,

Dexter-Essex, 1.440 mi. 20-ft. conc. through Dexter, 96,681 cu. yd. earth, 141 cu. yd. conc. In culvert, 901 cu. yd. conc. in culverts, 82,853 sq. yd. pavement, bridge over Drainage Ditch Lateral No. 2, Dist. 37, widen 2 25-ft. I-beams, 1 70-ft. truss, bridge over main drainage ditch, Dist. 8, widen 1 60-ft. truss, bridge over Drainage Ditch Lateral No. 1, Dist. 37, widen 1 50-ft. I-beam, box bridge over branch, bridge over Dexter Creek, 2 35-ft., 1 45-ft. deck girders, 118D, 179A, 60-88: Lewis-1.642 mi., 4.430 mi., 3.272 mi., 3.071 mi., 20-ft. conc., Canton-south, 125,627 cu. yd. carth, 6109 cu. yd. rock, 1228 cu. yd. conc., in culverts, 79 cu. yd. conc. in bridges, 153,838 sq. qd. pavement, widen 1 24-ft. deck girder bridge, 3 box bridges, bridge over Wyaconda River, 1 180-ft. truss, bridge over Oyster Branch, widen 2 20-ft. slabs, 38-A, 39-B, 347-A;

Audrain-1.511 mi. gravel, Centralia-north, 1954 cu. yd. earth, 1413 cu. yd. pavement,

SC-3; More—0.545 mi. gravel, Shelbina-Paris, 20-464 cu. yd. earth, 46 cu. yd. conc. in culverts, 585 cu. yd. conc. in bridges, 209,500 lb. struc-steel, 605 cu. yd. pavement, bridge over Otter Creek, 6 40-ft. I-beams, 1 78-ft. truss, 15.97A

Steel, 000 cu. yd. parkers.

Otter Creek, 6 40-ft. I-beams, 1 78-ft. truss, 15-27A;

Ralls—0.304 mi. gravel through Center, 0.852 same through New London, 1.582 mi. same through Perry, 23,843 cu. yd. earth, 101 cu. yd. conc. in culverts, 106 cu. yd. conc. in bridges, 3435 cu. yd. pavement, box bridge, 19-9A, 19-11A, 26-7;

Carroll—3.686 mi. crushed stone, Norbornenorth, 9227 cu. yd. earth, 73 cu. yd. conc. in culverts, 3465 cu. yd. pavement, SD-4;

Cass—2.857 mi., 3.301 mi. 20-ft. conc., Harrisonville-north, 12,316 cu. yd. earth, 74,456 sq. yd. pavement, 348-A, 348-B;

Platte—3.570 mi. gravel, 4.607 mi. gravel and crushed stone, Route 71-Clay County, 10,508 cu. yd. pavement, 92-4A;

Ray—3.693 mi., 3.675 mi., 3.354 mi. 10-ft. conc., Richmond-Excelsior Springs, 21,837 cu. yd. earth, 220 cu. yd. conc. in bridges, 64,412 sq. yd. pavement, bridge over Crooked River, 1 40-ft. deck girder and widen 1 25-ft., 1 40-ft. deck girder, 270-A, 270-B, 270-C, 270-D;

Cooper—3.870 mi., 3.954 mi., 20-ft. conc., Se-

11. 1 40-ft. deck girder, 270-A, 270-B, 270-C, 270-D;
Cooper—3.870 mi., 3.954 mi., 20-ft. conc., Sedalia-Tipton, 45,517 cu. yd. earth, 2704 cu. yd. cock, 73 cu. yd. in culverts, 374 cu. yd. conc. in bridges, 91,705 sq. yd. pavement, bridge over lamine River, 20-5-ft. slabs, bridge over Bartlett Branch, 1 24-ft. slab, bridge over Lamine River, widen 5 20-ft. slabs, 244B, 244C;
Morgan—0.625 mi. 20-ft. conc., Pettis County-Cooper County, 4.544 mi. same, Cooper County-Moniteau County, 24,879 cu. yd. earth, 388 cu. yd. rock, 56 cu. yd. conc. in culverts, 61,117 sq. yd. pavement, 244A, 244D.

Mo., St. Louis—Streets Committee of Bd. of Aldermen approved bills for street improvement projects costing \$310,870.

North Carolina—State Highway Comsn., Leslie R. Ames, Engr., Raleigh, plans making surveys for improving road to connect with proposed improvements on Sam's Gap High-way, which shortens the distance from John-son City, Tenn., to Asheville, by 19 mi.

N. C., Charlotte—City, J. B. Prigden, City gr., expend \$10,000 additional for street opening.

OKLAHOMA—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, has low bids totaling approx. \$155,000 for 5 roads and bridge project in following counties: Oklahoma—widening pavement, E. 23rd St., Lincoln Blvd. to Kelley Ave., Connelley Bros. Paving Co., 1741 N. E. Eighth St., \$4596.

\$4596; Carter—.482 mi. conc., U. S. 77, 3 mi. north of Springer northesterly, Ryan & Richards, Oklahoma City, \$12,500; 806 ft. conc., U. S. 77, 3 mi. north of Ardmore, Union Construc-tion Co., Pertoleum Bldg., Oklahoma City.

\$4150;
Pittsburg—6.66 ml. conc., U. S. 270, between McAlester & Bache, S. O. Maxey & Co., Durant, \$112.878;
Bryan—45 ml. conc., U. S. 50, near Bokchito, Ryan & Richards, \$9598;
Canadlan—7 bridges, between Union City and Wheatwind, J. W. Hopper, 706 W. 31st St., Oklahoma City, \$11,801.

St., Oklahoma City, \$11,801.

OKLAHOMA—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, opens bids Apr. 4 for 4 roads and 5 bridges in following counties:

Tillman—5.653 mi. grading, draining and 2 22 ft. 6 in. conc. pile trestle and 4 10x4x36 ft. r. c. b., State Highway 14, between Frederick and Red River roadway, 141,157 cu. yd. "A" exca., 148.29 cu. yd. "A" conc., 268 l. f. 18-in. r. c. pipe, 96 l. f. 24-in. same, 9978 lb. rein. steel; bridges, 300 cu. yd. "A" exca., 246.8 cu. yd. "A" conc., 133 cu. yd. "AA" conc., 37,120 lb. rein. steel. 190 l. f. conc. hand rail, 125 l. f. conc. piling, FAP 268B; way 34, Dewey and Custer County line, approx. 1 mi. east of southwest corner Dewey

County, continuing approx. 6.936 mi. northeast corner Sec. 33, Township 17 north, Range 20 west, \$4,769 cu. yd. "A" exca., 1254 cu. yd. "B" exca., 1925 cu. yd. "C" exca., 173.72 cu. yd. "A" conc., 53.704 lb. deformed steel bars, 144 l. f. 18-in. rein. conc. pipe, 292 l. f. 24-in. same, 212 l. f. 30-in. same, SAP 813-A;

Harmon—6.078 mi. grading, draining, 3 bridges, Farm to Market road, Gould south; roadway, 52,790 cu. yd. "A" exca., 156 cu. yd. "B" exca., 169.51 cu. yd. "A" conc., 13,964 lb. rein. steel, 32 l. f. 24-in. r. c. pipe, 32 l. f. 30-in. same; bridge, 300 cu. yd. "A" exca., 152.04 cu. yd. "A" conc., 135.85 cu. yd. "A" conc., 135.85 cu. yd. "A" conc. hand rail, 90,000 lb. struc. steel, 1560 l. f. conc. timber piling, 4200 f. b. m. conc. struc timber, removal old bridge, SAP 669-B; 4.683 mi. grading, draining, and 2 20-ft. 1-beam span pile trestle, 22-ft. roadway, Farm to Market road, Gould south; roadway, 34,301 cu. yd. "A" exca., 317 cu. yd. "B" exca., 140.02 cu. yd. "A" exca., 317 cu. yd. "B" exca., 140.02 cu. yd. "A" exca., 317 cu. yd. "B" exca., 140.02 cu. yd. "A" conc., 11.640 lb. rein. steel, 32 l. f. 18-in. r. c. pipe, 32 l. f. 24-in. r. c. pipe; bridge, 260 cu. yd. "A" exca., 26 cu. yd. "A" conc., 3500 lb. rein. steel, 80 l. f. rein. conc. handrail, 10,500 lb. struc. steel, 675 l. f. rec. timber piling, 2500 m. f. b. m. creo. struc. timber, removal old bridge. bridge.

S. C., Parris Island—Chief, Bureau of Yards and Docks, Navy Dept., Washington, D. C., opens bids Apr. 13 for widening conc. roads at marine barracks.

Tennessee—State Highway Comsn., R. H. Baker, Commr., make surveys of Iron Mountain Gap Highway throughout Limestone Cove and Sam's Gap to connect with North Caroline state line, which would result in shortening distance, Johnson City to Asheville.

ville.

TEXAS—State Highawy Comsn., Gibb Gilchrist, Highway Engr., Austin, plans 10 roads and 2 bridges in following counties:

Limestone—grading, draining, Highway 6; grading, draining, Highway 6; grading, draining, Highway 6, Highway 6; grading, draining, Highway 6, south of Marlin on west side of railroad:

Tyler—surfacing, Highway 106, Woodville to Polk County line;

Kimble—bridge over North Llano River, Highway 27:

Harrison-Upshur—20 ml. grading, draining, Highway 156, Harleton to point approx. 10 ml. west of Marshall;

Nacogdoches—2.5 ml. grading, draining, Highway 186, about 12 ml. east of Nacogdoches;

doches;
Concho-Menard—9.407 ml. grading, draining, Highway 4, Edens to .129 ml. south of Concho-Menard County line, FAP 616-C, Unit 1, \$66,000:
Cochram—12.194 ml. grading, draining, Highway 24, Hockley County line to Morton, \$11,500:
Burnet—19 ml. grading, draining, Highway 66, Burnet to Lampasas County line;
Bastrop—grading, draining, Old San Antonio Road Highway, Bastrop to Paige;
Ellis—7 ml. grading, draining, Highway 34, between Ennis and Ray, \$50,000.

TEXAS—State Highway Comsn., Gibb Gil-hrist, Highway Engr., Austin, probably call or bids soon for 23 roads in following purifies: christ, Hi for bids counties:

for bids soon for 25 roads in following counties:

Matagorda—10.311 mi. rein. conc. pavement, Highway 60. Bay City to Wharton County line, FAP 609-B. Unit 2;

Panola—5.980 mi. triple bitum. surface treatment, Highway 64, Carthage to point 6.2 mi. west, SAP 591, Unit 2;

Presidio—13.343 mi. grading, draining, Highway 17, Ochoa road south to Presidio, SAP 080-D. Unit 1;

Reagan—18.627 mi. caliche and waterbound broken stone base courses, Highway 99, Upton County line east to Big Lake, SAP 904-A, Unit 2;

Limestone—13.133 mi. grading, draining, Highway 14, Groesbeck to Falls County line,

SAP 904-A, Unit 2;

Limestone—13.133 mi. grading, draining, Highway 14, Groesbeck to Falls County line, FAP 161-Reop., Unit 1;

Andrews—13.762 mi. grading, draining, Highway 137, Andrews northwest to Gaines County line, SAP 936-D, Unit 1;

Henderson—4.563 mi. rein. conc. pavement, Highway 31, Malakoff west to Navarro County line, FAP 575-D, Unit 2;

McLennan—11.470 mi. grading, draining, Highway 7, Coryell County line, point 5.5 mi. northeast of McGregor, FAP 323-Rev., Unit 1;

Cherokee—8.644 mi. grading, draining, SAP 96-C and FAP 566-C, Unit 1;

Dallas—3.816 mi. grading, draining, Highway 1, Commerce St. viaduct to connect with present Highway 1, SAP 62-B, Unit 1;

Ellis—5.097 mi. rein. conc. paving, Highway 14, south city limits of Ennis to point 34 mi. south of Grove Creek, FAP 179-Reop., Unit 2;

Hemphill—9.393 mi. rein. conc., Highway 9, Atacoas County, High-

Unit 2; Hemphill—9.393 mi. rein. conc., Highway 9. Atacosa County line to Three Rivers, SAP 886-A & B. Unit 2;

Hutchinson—946 ml. grading, draining Highway 117, end of original S. P. 925-B to connect with present road and surfacing 11.822 ml. with water obund callehe base from top of Caprock northeast to Hansford County line, SAP 925-B, Units 1 and 2; King—15.323 ml. grading, draining, Highway 4, Guthrie south to Stonewall County line, SAP 854-E, Unit 1; Karnes—15.502 ml. sledged sandstone base course, Highway 112, Ecleto Creek northeast to Wilson County line, SAP 789-B & C, Unit 2;

course, Highway 112, Ecleto Creek northeast to Wilson County line, SAP 789-B & C, Unit 2; Ellis—5.151 ml. rein. conc. pavement, Highway 14, north boundary line Road Dist. 16 to south boundary line Road Dist. 16 to south boundary line Road Dist. 15, FAP 384-B & 384-Reop., Unit 2; 5.323 ml. rein. conc. pavement, Highway 14, Brushy Creek north to Dallas County line, FAP 307-A & B, Unit 2; Hemphill—7.589 ml. rein. conc. pavement, Highway 4, junction Highways 4 and 33 to north city limits Canadian, FAP 45, Reop., Sec. C, Unit 2; Refugio—17.740 ml. rein. conc. pavement, Highway 128, San Patricio County line to point 3 ml. noftheast of Refugio, SAP 840-A, Unit 2; Tyler—8.269 ml. grading, draining, Highway 40, Neches River bridge south to Colmesnell, FAP 606-C, Unit 1; Reeves-Jeff Davis—12.127 ml. grading, draining, dighway 27, point 4 ml. south intersections with Highway 1 to point 4.5 ml. north of Toyahville, FAP 408-B, Sec. 1 & 2, Unit 1; Randall—15.220 ml. caliche base course.

Unit 1; Randall—15.220 mi. caliche base course, Highway 33, Deaf Smith County line to Canyon, FAP 174-A, Reop., Unit 2.

TEXAS—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin. opens blds Apr. 4 for 12 roads, est. \$966,000, in following counties:

christ, Highway Engr., Austin. opens bids Apr. 4 for 12 roads, est. \$966,000, in following counties:

Brazos-9.687 ml. conc., Bryan northeast to Kurten, FAP 490-E, Unit 2, Highway 21, 1000 cu. yd. common roadway exca., 208,307.5 sq. yd. fine grade subgrade and shoulders, 116,509 sq. yd. conc. pavement (W. C. R.), 214,169.4 lb. rein. steel for pavement, 1400. l. f. wire mesh guard fence, 3972.4 cu. yd. sand subgrade treatment, 40,427.9 cu. yd. sand subgrade scelearing, 52.17 acres grubbing, 153,623 cu. yd. common roadway exca., 500 cu. yd. solid rock roadway exca., 1659 cu. yd. dry channel exca., 1025 cu. yd. "A" culvert exca., 150 cu. yd. "B" culvert exca., 146 hours blading embahment, 1930 M. gal. jetting and ponding, 779.93 cu. yd. "A" conc., 95,156 lb. rein. steel (for structures), 268 R. W. markers, 104.5 l. f. conc. railing for structures (low type), 65 cu. yd. rip rap Cl. 1, 115 l. f. wire mesh guard fence; Cherokee—8.644 ml. grading. draining. Rusk south to Road Dist. No. 2 line, FAP 566-C-SAP 961-C, 56.07 acres clearing, 5631 acres grubbing, 188,961 cu. yd. common roadway exca., 1429 cu. yd. dry channel exca., 2006 cu. yd. "A" culvert exca., 400 cu. yd. "B" culvert exca., 6807.5 M. gal. jetting and ponding, 1112.71 cu. yd. "A" conc., 142,935 lb. rein, steel (structures), 192 l. f. rein conc. pipe, 24-in. diam., filling 4 cold wells, 178 R.W. markers, removing 1 old structure:

Colorado-Fayette—15.982 mi. jetting and ponding embankments. La Grange east 45

re:
Colorado-Fayette — 15.982 mi. jetting and
onding embankments, La Grange east 4.5
County line to Colorado

Colorado-Fayette — 15.982 ml. jetting and ponding embankments, La Grange east 45 ml., and Fayette County line to Colorado River bridge, SAP 765-A&C, Highway 71, 3632 M. gal. jetting and ponding, 4530 cl. yd. common roadway exca.;

Refugio—71.738 ml. conc. pavement, San Patricio County line to point 3 ml. northeast of Refugio, SAP 840-A, Unit 2, Highway 128, 18,755 cl. yd. uncl. roadway exca. 312.821 sq. yd. fine grade subgrade and shoulders, 185,516 sq. yd. conc. pavement, strength design, 2351 sq. yd. high early strength conc. pavement, strength design, 1,018,105 lb. rein. steel for pavement, 490 l. f. wire mesh guard fence, 362 R.W. markers;

l. f. wire mesh guard fence, 362 R.W. markers;

Hutchinson—11.822 mi. grading, draining, caliche base courses with single bitum. surface treatment. Cap Rock northeast to Hanford County line, SAP 925-B. Units 1 and 2 13.004 cu. yd. common roadway exca., 123 cu. yd. "A" culvert exca. 321.0 M. gal. jetting and ponding. 10,900 cu. yd. stripping material pits, 249.692 sq. yd. fine grade subgrade and shoulders, 1070 hours extra rolling subgrade and base courses, 3021.25 Mgal. sprinkling subgrade and base courses, 329.647 cu. yd. caliche base courses, 529.67 cu. yd. material hauled additional quarter mile, 107.17 cu. yd. "A" conc., 13.516 lb. rein steel (structures), 400 l. f. drilling water wells, 138.717.8 sq. yd. single bitum. surfact treatment; Gaines—13.204 mi. grading, draining. Andrews County line to Seminole, SAP 936-E. Highway 137, 97,183 cu. yd. caliche rock roadway exca., 15.241 cu. yd. caliche rock roadway

yd. "A bankme lb. rein Cochi Hockle SAP 20 mon ro exca., yd. "B yd. "B bankme lb. rein dipper 172 R.V Daila

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merce Highwa acres g way ex exca., (dry ch exca., gal. jet conc., l. f. 18 same, sconc. p
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sq. yd. 440 hou sq. yd. steel for rap, 10 30,000 mi., 14 13.030 south coline, Sa acres cobing (exca., 229,349. shoulde grade water extra 82,032

cu. yd. Texas christ, Apr. 5 Apr. o Shelby

Tex., 000 ros 000 to add \$7 Highwa Virgi Mullen, plete si end of Hanove Bowling

Va., \$100.00 Va., approa Park.

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Johnso 4 road Kent ington prox. 104 B Spring Serub

exca. 776 cu. yd. dry channel exca., 267 cu. yd. "A" culvert exca., 226 hours blading embankment, 175.40 cu. yd. "A" conc., 18,244 lb. rein. steel (structures), 216 R.W. mark-

exca., 740 cu. yd. "A" conc., 18,244 lb. rein. steel (structures), 216 R.W. markers; Cochran—12.194 ml. grading, draining, Hockley County line northeast to Morton, 8AP 205-D, Highway 24, 64,331 cu. yd. common roadway exca., 759 cu. yd. dry channel exca. 247 cu. yd. "A" culvert exca., 50 cu. yd. "B" culvert exca., 25 hours blading embankment, 103.19 cu. yd. "A" conc., 9427 lb. rein. steel (structures), 406 l. f. asphalt dipper corr. galv. metal pipe (24-in. diam.), 172 R.W. markers;

Dallas—3.816 mi. grading, draining, Commerce Ct. viaduct to connection with present Highway No. 1, 4.54 acres clearing, 4.54 acres grubbing, 50,639 cu. yd. common roadway exca., 49,523 cu. yd. solid rock roadway. exca., 6260 cu. yd. earth backfill, 381 cu. yd. dry channel exca., 1063 cu. yd. "A" culvert exca., 409 cu. yd. "C" culvert exca., 649 M. gal. jetting and ponding, 169,21 cu. yd. "A" conc., 14,277 lb. rein. steel (structures), 60 l. f. 18-in. rein. conc. pipe, 1324 l. f. 24-in. same, 322 l. f. 48-in. same, 74 l. f. relaying conc. pipe 18-in. an. over;

Live Oak—13.910 mi. conc. pavement, Atascas County line to point 1 mi. north of Three Rivers, SAP 886-A&B, Unit 2, Highway 9, 5000 cu. yd. common roadway exca., 49, yd. fine grade subgrade and shoulders, 440 hours extra rolling earthwork, 163,269,37 sq. yd. conc. pavement, 306,748,54 lb. rein. steel for pavement, 396,63 cu. yd. grouted rip rap, 10,000 cu. yd. sand subgrade treatment, 30000 cu. yd. sand subgrade subgrade and shoulders, 1640.6

Texas—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, opens bids Apr. 5 for 6.34 mi., Highway 22, M-11-E-4, Sheby County, 16,738 cu. yd. gravel loaded and hauled first ¹/₄ mi., ²51,070 cu. yd. gravel loaded and hauled additional ¹/₄ mi. ³-24

Tex., Sherwood—Iron County voted \$50,000 road improvement bonds; approx. \$100,000 to be used on lateral roads; state will add \$750,000 to remainder to pave State Highway 99 across county.

Virginia—State Dept. of Highways. C. S. Mullen, Ch. Engr., Richmond, ordered complete survey of proposed new highway, from end of Chamberlayne Ave., Richmond, toward Hanover courthouse and to connect with Bowling Green road.

Va., Richmond—City Council authorized \$100,000 paving appropriation for 5 main traffic arteries.

Va., Richmond—City, Col. R. Keith Compton, Dir. Public Works, plans improving approaches to war memorial carillon, Byrd Park.

Contracts Awarded

D. C., Washington — Dist. Commrs., 427
Dist. Bldg., let contract to Brenizer Trucklag Co., 1501 S. Capitol St., at \$26,833, for
repairs to conc. roadway and alleys; 10,000
sq. yd. 7-in. 1:2:3 conc., 400 l. f. curbing,
1200 sq. yd. 7-in. 1:2:3 conc. for driveway,
1500 sq. yd. wire mesh; Frank Crouch, Supt.
Cuts, 425 Dist Bldg.

3-17

1500 sq. yd. wire mesh; Frank Crouch, Supt. Cuts, 425 Dist Bldg.

D. C., Washington—Quartermaster Depot, 20th and C Sts., N. W., let contract to Corson & Gruman Co., 33rd and K Sts., N. W. at \$34,739, for applying hot surface treatment on Miles and McKinley Aves., Arlington National Cemetery, 1229 sq. yd. 3-10 D. C., Washington—Quartermaster Depot, 20th and C Sts., N. W., let contract to Union Paving Co., Seventh and T Sts., N. E., at \$5.89, for 8600 sq. yd. bit. conc. wearing surface (approx. 500 tons).

KENTUCKY—State Highway Comsn., Ben Johnson, Chmn., Frankfor, let contracts for 4 roads in following counties:

Kenton—4.012 mi. rein. conc. paving, Covington-Morning View road, Covington to approx. 400 ft. south Decoursey Creek, S. P. 104 BS. De Calvo Construction Co., 2276 Spring Grove Ave., Cincinnati, Ohio. \$68.418; Nicholas—fill approaches to bridge over Scrub Grass Creek, 1 mi. east of Myers Strion, Carlisle-Flemingsburg road, S. P. 43 AI-G, Ralph E. Mills Co., Inc., Frankfort.

Owen—5.800 mi. rein. conc. paving, Owen-pa-Frankfort road. Monterey to Franklin

County line, F. A. 221 A 1 S, Wilmore Paving Co., 1517 Wilmore Bidg., Middletown, Ohio, \$69,203; 9.797 mi. rein. con. paving. Owenton-Frankfort road, ½ mi. south of Owenton Monterey, F. A. 221 A2S, Wilmore Paving Co., \$122,492.

N. C., Charlotte—City Council let contract to Blythe Bros. Co. for paving several streets.

Tex., Austin—City start resurfacing Congress Ave. with rock asphalt at once; Southern Paving Co., 3101 Flynn St., Dallas, Gen. Confr.

Tex., Beaumont—Jefferson County Commrs. let contract to W. D. Haden Co., Port Arthur, through J. S. Edwards Co., local agents, for 50,000 tons of shell for road maintenance, at approx. \$90,000.

maintenance, at approx. \$90,000.

Va., Richmond—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, let contracts for 1.560,000 gal., gasoline: American Oil Co., Baltimore, Md., 1,065,000 gal., \$139,-898; Delta Oil Co., Petersburg, 40,000 gal., \$5296; Harvey System, Clifton Forge, 305,-000 gal., \$42,297; Independent Oil Co., Appalachia, 40,000 gal., \$5996; Standard Oil Co. of New Jersey, New York, 110,000 gal., \$15,724; 77,250 gal. lubricating oil, Harwood Bros., Richmond, \$22,222; applying 4,516,000 gal. bitum. material for surface treatment, Sam E. Finley, 103 Hampton Ave., Virginia Hts., Roanoke, \$30,344; 1,005,000 gal. same, Southern Asphalt Co., North Blvd. and Ellen St., Richmond, \$6734; rejected bids for over \$500,000 in contracts for furnishing bitum. materials for next 12 months; will call for new bids at early date.

Sewer Construction

Sewer construction in LAND DEVELOP-MENT projects involves the expenditure of large sums of money. Under that classifica-tion details of these improvements are re-ported

Ark., Fort Smith—City Comsn., reported, approved construction of Hendricks Hills sewer project; H. S. Peck, City Engr.

Mo., Jefferson City—See Want Section-Bids Asked.

Tex., Ozona — City, reported, considering installation of sewer system; may vote on \$22,000 bonds.

Telephones and Radio

Alabama—Alabama Public Service Comsn., Montgomery, approved purchase by Alabama Public Utilities Co., W. Arnold Duncan, Pres., 105 W. Adams St., Chicago, III., of telephone properties in Alabama of South States Utilities Co.; company owns and operates exchanges in Haleyville, Winfield, Carrollton, Vernon, Phil Campbell, Aliceville, Fayette, Reform, Bear Creek, Hackleburg, Double Springs, Gordo, Sulligent.

Ark. Star City—Southeast Arkansas Tele-

Ark., Star City—Southeast Arkansas Telephone & Power Co., L. C. Sprague, Supt., reported, construct 5 mile transmission line Furth to Meroney.

Ga., Valdosta—E. L. Skinner, 585 S. Negley Ave., Pittsburgh, Pa., reported, considering establishing radio broadcasting station.

Mo., Springfield—Aviation Div. of U. S. Dept. of Commerce, reported, started work on \$60,000 radio station; John P. Sutton, Govt. Engr. in charge; Manley Heating & Plumbing Co. has contract for drilling deep well pump; erect 2 towers, 125 ft. high and 15 ft. square at base placed on 5 ft. conc. footings; N. D. Foreman, will be chief operator of station.

Foreman, will be chief operator of station.

Tenn., Nashville — Angle Blackford Co., 1314 Nashville Trust Bildg., has contract for erecting Broadcasting Station, WSM, for National Life & Accident Ins. Co., corner Callander Rd., (Franklin Pike), Williamson County; 66x72 ft.; conc.; brick; tile; metal doors and trim conc. and tile floors; built-up and slate roof; cost of building \$25,000; of equipment \$25,000; found. and basement walls complete; first floor slab poured; Hart. Freeland & Roberts, Archt., Independent Bildg., Nashville. See Want Section—Machinery and Supplies.

Textile Mills

Ala., Paint Rock-Aycock Hosiery Mill will probably rebuild plant destroyed by storm. probably rebuild plant destroyed by storm.
Ga., Rossville—Peerless Woolen Mills erecting building 94x300 ft.; 3 stories; flat slab rein. conc. construction for heavy warehouse loading; exterior conc. frame with curtain walls of brick and steel sash; first story for manufacturing purpose, second for manufacturing and storage, third for storage; work being carried on by J. M. Allen Co., of Chattanooga, Tenn.; owner purchasing materials; steel sash, brick, cement, sand and gravel, struc. steel, etc., already purchased; bids received on sprinkler equipment; heating and plumbing and electrical work will probably be done by company's forces; electric conveyor and elevator not yet bought; W. H. Sears, Archt., James Bldg., Chattanooga, Tenn.

Ky., Louisville—General Shoe Lace Co., S. W. Cor. 30th and Magazine Sts., reported, let contract to J. D. Jennings, Louisville, for remodeling and improving mill on Magazine St.

N. C., Asheboro-McCrary Hosiery Mills, reported, let contract to W. T. Branson Co., Inc., 1505 S. Tryon St., Charlotte, for installing sprinkler system.

stalling sprinkler system.

N. C., Durham — Erwin Cotton Mills Co., Erwin, reported, acquired Pearl Cotton Mill, Durham, which will be operated as Mill No. 6 in Erwin chain; operates 240 broad looms and 13,664 spindles; manufactures wide sheeting; will improve; company advises have not made any definite plans as to Pearl Cotton Mill.

Tennessee—Bear Brand Hosiery Co., F. A. Crocker, Sec., Beaver Dam, Wis., reported plans moving plants from Beaver Dam, Harttord and Waupen; sites under consideration in Tennessee.

Water Works

Details of water works improvements in connection with the many LAND DEVELOP-MENT operations will be found under that Classification.

Ala., Tuscaloosa—J. O. Holloman, reported, low bidder at \$24,900 for constructing addition filter plant; W. H. Nichol, City Engr.
Fla., Tampa—Orient Park Water Co., incorporated; R. E. Philopt, 205 Zack St.
Mo., Jefferson City—City, H. C. Asel, Mayor, plans submitting proposition for voting on bonds for building or acquiring water works system.

Md., North East—Town. Sylvester Preston, voted against installing town water system.

Mo., Trenton—City, reported, plans water works, intake, etc.; Burns & McDonnell Engr. Co., 400 Interstate Bldg., Kansas City, Engrs.

Tenn., Memphis—Bd. of Water Commrs., receives bids April 8 for construction of 1 or 2 gravel type wells on grounds of new Sheahan pumping station; plans, etc., from office of superintendent corner of Second and Adams Ave.

3-10

Tenn., Nashville—City, R. L. Lawrence, r., Supt. of Waterworks Dept., reported, seeives bids April 5 for aerator at filtrareceives bition plant.

Tex., Dallas—City, Earl Goforth, Sec., let contract to McWane Cast Iron Pipe Co., 1201 Vanderbilt Rd., North, Birmingham, Ala., and National Cast Iron Pipe Co., Electric Bldg., Dallas, for pipe for water works department.

Woodworking Plants

La., Bogalusa—J. H. Switzer, reported, plans operating veneer box mfg. plant, formerly operated by General Box Co., manufacturers of veneer boxes.

Miss., McComb—Jacobs Brothers, McComb, reported, has contract for constructing main building at Fernwood for Indianapolis Wirebound Box Co., Indianapolis, Ind.; soon let contracts for removal and reconstruction at Fernwood of plants of McComb Box Co. and Mississippi Plywood Co.

Tex. San Antonio — Industrial Port

Tex., San Antonio — Industrial Dept., Chamber of Commerce, H. H. Ochs, Pres., re-ported, interested in establishing furniture manufacturing plants in Southwest Texas.

FIRE DAMAGE

- Ala., Birmingham—Fairview School, 2621 Twenty-Ninth St., loss \$15,000 to \$20,000. Ala., Montgomery—City Hall, loss \$200,000. Ark., Conway—Courthouse.

- Ark., Helena—First Baptist Church, West Helena; loss \$22,000.
- Ark., Junction City-Union Hardware Co., ss \$25,000.
- Ark., Eureka Springs—Thatch Hotel, First Christian Church and Episcopal Church; loss \$35,000.
- Ark., Osceola—Dryer house of McFerrin Gin, Lee Wilson & Co., Proprs.; loss \$25,000.

draining, 925-B to surfacing liche base Hansford and 2; ng, High. Il County stone base northeast 9-B & C,

pavement Road Dist Dist. 15, 5.323 mi. 5.323 mi Brushy FAP 507. avement

and 33 to 15, Reop., avement. SAP 840g, Hi

grading, south in-t 4.5 mi. c. 1 & 2, ibb Gil-ns bids follow-

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way 21, 208,307.5 oulders, C. R.), nt, 1400 cu. yd. cu. yd. mile; Neches AP 606-z, 52.17 g, 52.17 n road-oadway a., 1025 d. "B" mbank-onding, n. steel s, 104.5

aining, FAP 56.31

Fla., Coral Gables, Miami—Walsh Co., C. A. Mayer, Mgr., packing house, loss \$10,000. Fla. Milton—Spring Hill School, 10 miles from Milton, loss \$10,000.

Fla., Miami—Tritt Building, 914 N. W. First Ave., loss \$12,000 to \$15,000.

Ga., Atlanta—Plant of Acme Casket Co., 209 Haynes St.; loss \$20,000.
Ga., Wrightsville—Price-New Home Consolidated school bldg., 8 mi. east of Wrightsville.

Ky., Bowling Green—Plant of Park City Milling Co.; loss \$15,000. Ky., Glasgow—B. G. Ellis Bldg., loss \$30,000 to \$40,000.

Ky., Middlesboro — Union Tanning Co., archouse, loss \$40,000.

La., Minden—Dwellings, W. B. Melton and Mat Lowe; loss \$10,000.

Md., Baltimore—Building N. W. Cor. Redwood and Liberty Sts., first floor occupied by Nevin Bus Terminal.

Md., Upper Marlboro—Residence, Mrs. Elsie M. Scott, Mount Airy near Upper Marl-

Miss., Magee—People's Store, J. B. Logan, r.; loss \$15,000.

Miss., Port Gibson-Port Gibson Planing Mill.

Md., Elkton—Barn, Conrad Reid, loss \$10,000.

Mo., Carthage — Diamond Consolidated School, loss \$25,000.

Mo., Oak Ridge—High and Grade School building, E. C. Drum, Pres. school bd., loss \$25,000.

Mo., St. Louis—Casting plant of City Foundry Co., S. E. Cor. Ninth St. and Park Ave.; loss \$60,000.

N. C., Durham-Pritchard-Bright Clothing Store; loss \$35,000.

N. C., Goldsboro—Lumber yard of Atlas Plywood Co.

N. C., Henderson—Henderson Institute for Colored, Dr. J. A. Cotton, principal, loss \$25,-

N. C., Selma—Residence, J. W. O'Neal, Massy St.; loss \$10,000.

N. C., Smithfield—Banner Warehouse, Capt. L. Skinner, owner, loss \$25,000 to \$35,000. N. C., Stateville—J. Knox building.

N. C., Washington—Railway Station of Norfolk Southern R. R. Co., F. L. Nicholson, Ch. Engr., Norfolk, Va., on Pike road; We-nona warehouse, New Holland Corp., owner, loss \$200,000.

Okla., Ponca City—Portion of plant of Continental Oil Co.

S. C., Greenville—Dwellings, Will Gross, Ernest Harbin and Marcus Rogers.

S. C., Jonesville—Cotton Warehouse, Jonesville Oil Co., owner.
S. C. Pelzer—Offices of New England Southern Mfg. Co.; loss \$10,000.

S. C., Rock Hill—Winthrop College dairy farm bldgs., loss \$45,000. S. C., Sumter—Dormitory Morris College, loss \$25,000.

S. C., Georgetown—Fogel's Store and Qualy Shop, loss \$90,000.

S. C., Winnsboro-Winnsboro Hotel.

Tenn., Jellico-Palace Theatre.

Tenn., Memphis—Lumber warehouse, E. L. Bruce Co., C. Arthur Bruce, Vice Pres.; loss \$150,000.

Tenn., Pulaski—Clubhouse, Milky Way Farm, Frank C. Mars, Chicago, Ill., loss \$50,-

Tex., Houston—Honerkamp Lumber Co.'s yard, 2900 Commerce St., loss \$25,000.

Tex., Laredo—Warehouse, Francisco Viscaya, loss \$30,000.

Tex., Ledbetter—William Kruse store, loss \$12,000.

Tex., San Antonio—Store, N. Alterman, 119 East Commerce St.; loss \$12,000.

Va., Pulaski—Plant of Pulaski Hardwood Flooring Co., C. N. Tester, Asst. Mgr.; loss \$70,000.

Baltimore, Md.; Wm. A. Miller Elevator & Mch. Co., 920 N. Main St., 8t. Louis, Mo.; Gurney Elevator Co., 109 W. 64th St., New York; Atlantic Elevator Co., Erie Ave. and D St., Philadelphia, Pa.; American Elevator & Mch. Co., 500 E. Main St., Louisville, Ky.; General Electric Co., Schenectady, N. Y. Otis Elevator Co., Sto. 18th St., N. W.; A. B. See Elevator Co., 14th and H. Sts., N. W.; A. B. See Elevator Co., 14th and H. Sts., N. W.; Alloughton Elevator & Machine Co., Vermont Bidg., Gurney Elevator Co., Southern Eldg., all Washington; Westinghouse Electric Elevator Co., 30th and Walnut Sts., Philadelphia, Pa.; Elevator Locks Co., 119 N. Washington St., Peoria, Ill.; S. Heller Elevator Co., Milwaukee, Wis.; Warner Eevator Mg. Co., Cincinnati, O. D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supyg. Archt., Washington, opens bids May 6, construction and completion of Department of Agriculture Extensible Building, Washington (except elevators and work under contracts Nos. 1 and 2). 347

Ga., Marietta — Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bid. Building Construction Co., Chicago, Ill., \$11,786, U. S. post office.

La., Barksdale Field, Shreveport—(on-structing Quartermaster opens bids April 90, air corps barracks.

La., Barksdale Field, Shreveport—K. C. Wilson, Slattery Bldg., Shreveport, low bidder at \$43,800 on new 1-story, 165x115 rein. conc., brick, tile and stucco trim gymnasium bldg.; Capt. Geo. E. Lamb, Constructing Quartermaster, Barksdale Field.

conc., brick, tile and stucco trim gymnasium bldg.; Capt. Geo. E. Lamb, Constructing Quartermaster, Barksdale Field,
La., Barksdale Field, Shreveport—U. S. Army, Capt. Geo. E. Lamb, Constr. Quartermaster, receives bids April construction airport barracks building, cost \$125,000; rein. conc., brick, tile stucco.

La., Baton Rouge—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids April 5 for U. S. post office building, Following contractors estimating: United Construction Co., Munsey Bldg., Washington: Ralph Sollitt & Sons Construction Co., 518 E. Sample St., South Bend, Ind.; Gervais F. Favrot. Balter Bldg., Caldwell Bros., 518 Howard Ave., Thomas H. Brockman, Canal Bank Bldg., R. P. Farnsworth & Co., O. M. Gwin Construction Co., 3503 Fern St., T. A. Pittman, Canal Bank Bldg., George J. Glorer Co., Whitney Bldg., all New Orleans; George A. Fuller Co., 57th St. and Madison Ave. New York; Worsahm Bros., Medical Arts Bldg., Knoxville, Tenn.; C. E. Mumford, Bot 182, Fairmont, W. Va.; George E. Wieland, Travis Bldg., San Antonio, Tex.; James I. Barnes, Box 312, Springfield, O.; Theiraul Contracting Co., 534 E. Johnson St., Philadelphia, Pa.; John Largura & Co., 500 W. Pike St., Clarksburg, W. Va.; Christy-Dolph Collins Construction Co., Box 955. Beaumont, Texas; Charles Weitz's Sons, 713 Mulberry St., Des Moines, Iowa; S. & W. Construction Co., Shrine Bldg., Shreveport, La.; B. W. Construction Co., 720 N. Wabash Ave, Rosen Fischel, 11 S. LaSalle St., both Chicago; L. C. Garber, Standard Life Bldg., Jackson, Miss.; Phelps-Drake Co., Metropolitan Life Bldg., Libbey & Libby Co., 244 2nd Ave. S. Minneapolis, Minn.; Gordon Walker, Telephone Bldg., Shreveport, La.; B. W. Construction Co., Rosevett Bldg., both St. Louis, Mo.; Southern Ferro Concrete Co., Atlanta Trust Co. Bldg., Malanta, Ga.; Nathan Wohlfeld, Cortractors Bldg., Dallas, Tex.

Miss., Cleveland—Construction is reported to start on \$75,000 post office within 90 days.

Miss., Winona—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington. opens bids April 19 construction U. S. post office, total cos* \$75,000. 11.6

N. C., High Point—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington. reported, has low bid, U. S. post office, Spence Brothers, Contrs., Brewer Arcade. Saginaw, Mich., at \$234,800. 31.0

Okla., Miami—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids April 21, U. S. post office, court house 3-story, cost \$235,000. 3.5.31

Tenn., Chattanooga—James C. Miller, Contraction of the story of the st

3-story, cost \$235,000.

Tenn., Chattanooga—James C. Miller, Contractor, Campbellsville, Ky., estimating of Thattanooga post office, bids open April 7.

(Recently incorrectly noted Campbellsville, 224

Tenn., Knoxville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids April 26 for furnishing all labor and materials and performing all work for construction (except elevators and lighting fixtures) of U. S. post office and court house total cost \$1,575,000; Baumann & Baumann, Archts., S13½ Market St., Knoxville. 2.1

Tex., McAlln—William D. Van Siclen, Brownsville, Tex., reported, selected as new architect for postoffice to be built at McAllen.

'ex., Stephensville—Treasury Dept., Jas. Wetmore, Act. Supvg. Archt., Washing

BUILDING NEWS

BUILDINGS PROPOSED

Bank and Office

Okla., Enid-See Store Buildings

Tex., Longview—Oliver Daniels and associates. Longview, plan 6-story office bldg., 60x100, rein. conc., steel frame, brick and stone trim; cost \$175,000; P. E. Zimmerman, Longview, associate archt.; Wyatt C. Hedrick, Inc., 1005 First National Bank Bldg., Fort Worth, Archts.

Churches

La., Alexandria—First Christian Church, Dr. Keeling, pastor, plans new brick church and 2-story brick veneer Sunday building, Eighth and Jackson Sts.; estimated cost \$25,000; A. F. Wigs, Indianapolis, Ind., archt. and Scott Yeager, Alexandria, Supvg. Archt. 12-10

La., Shreveport—First Church of the Nazarene, Rev. M. V. Dillingham, pastor, plans completing edifice, 1027 Jordan St.; Edward F. Neild, City Bank Bldg., Archt.

F. Neild, City Bank Bldg., Archt.

Miss., Senatobla—Methodist Church, Rev. Pat Luter, pastor, plans rebuilding church recently destroyed by fire at loss of \$30,000.

Okla., Norman — St. John's Episcopal Church plans erection new church building. Asp and Duffy Sts., 32x112, brick and Indiana limestone with tile roof, interior will be colonial brick and paneled ceiling with exposed wood trusses; C. A. Popkin, Commercial Bldg., Tulsa, Archts.

Tex., Dallas—Full Gospel Church, Peak and Garland Sts., Rev. Albert Ott, Pastor, plans addition to church.

Va., Bedford—Washington Ave., Baptist

Va., Bedford—Washington Ave., Baptis Church plans building church, cost \$12,000 Alba K. Simmons, 109 First St., S. W. Roanoke, Va., Archt. Baptist

Va., Lynchburg—Madison Heights Christian Church, Rev. G. C. Lowney, Pastor, reported, plans erecting new church building.

City and County

La., New Orleans—City Comsn. Council has low bids refrigerating equipment: Jefferson Market, Banta Refrigerating Co., Clearfield. Penn., \$11,247; St. Bernard market, General Electric Co., Union Indemnity Bldg., New Orleans.

Mo., St. Louis—City, Board of Police Commrs., purchased site at 1906 Lafayette Ave. as site for \$125,000 building.

Va., Luray—Circuit Court plans expending \$15,000 repairing county jail.

Dwellings

D. C., Washington—Robert Caruso has permit erect five 2-story brick and tile dwellings, 1300-08 Sheridan St., N. W., cost \$35,000.
D. C., Washington—Columbia Construction Co., Ninth and Dahlia Sts., N. W., has permit 2½-story residence, 2700 Military road, N. W., cost \$17,500.

D. C., Washington—C. H. Small & Co., 925 15th St., plans 4-story, brick and frame dwellings, 4418-20-24 and 26 14th St., cost \$25,000; Geo. T. Santmyers, Archt., 925 15th St., N. W.

Fla., Miami—W. E. Briggs, 3425 Sheridan Avt. has permit stucco residence, cost \$10,-000; C. B. Schoeppl, Archt., 528 Lincoln Rd., Miami Beach.

Okla., Tulsa—M. W. Turner, Commercial Bldg., has permit \$15,000 residence.

Va., Charlottesville — George Harlow, re-orted, plans residence; E. E. Burruss,

Va., Charlottesville — Abraham Berglund, Rigby Rd., receives bids April 8, 1½-story brick residence, cost \$10,000; 50x35, hardwood floors, slate roofing; Elmer E. Burruss, Charlottesville, Archt.

Va., Mountain View—Buff Alphin, Mountain View Dairy Farm erect modern Spanish residence, cost \$15,000; Alba K. Simmons, 109 First St., S. W., Roanoke, Va., Archt.

Government and State

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids April 8, extensions, remodeling and enlargement, post office bldg. (extended date from March 29).

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids April 18, elevator plant for U. S. Post Office bldg. Following estimating: Warsaw Elevator Co., Mercer and Grant Sts.,

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Arcade.

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Jas. s. post ton, announced Mark Lemmon, Tower Bldg., pallas, Tex., chosen as architect for post office building.

Hospitals, Sanitoriums, Etc.

p. C., Washington—Department of the Interior, John H. Edwards, Asst. Sec., opens bids April 19, construction and completion elinics building, Freedmen's Hospital. 2-25

b) C., Washington, John H. Edwards, Asst. Sec., opens bids April 19, construction and completion clinics building. Freedmen's Hospital. 2-25 Ky., Louisville — Treasury Dept., Jas. Wetmore, Act. Supvg. Archt., Washington, opens bids April 12, construction Marine Hospital. Following estimating: Worsham Bros., Medical Arts Bldg., Knoxville, Tenn.; R. P. Farnsworth & Co., Maritime Bldg., New Orleans, La.; H. G. Whittenberg, 8th and Denmark Sts., J. E. Boswell & Co., 668 Cecil Ave., L. W. Hancock, Louisville Trust Bldg., J. W. Schickli & Bros., 13th and Oak Sts., J. F. Russell & Co., 3006 Frankford Ave., Wortham Construction Co., Starks Bldg., H. A. Doll Co., 1114 Lexington Ave., American Elevator & Machinery Co., 500 E. Main St., all Louisville, Ky.; Murch Bros., Constr. Co., 610 Olive St., Wm. A. Miller Elevator & Mch. Co., 920 N. Main St., St. Louis, Mo.; J. P. Cullen & Sons, 109 S. Mail St., Janesville, Wisc.; Geo. A. Fuller Co., 57th and Madison Ave., Gurney Elevator Co., Washington and 109 W. 6th St., both New York; Jas. I Barnes, Box 312, Springfield, O.; Chicago, Ill.; Theriault Contracting Co., 534 E. Johnson St., Westinghouse Electric Elevator Co., 20th and Walnut Sts., Atlantic Elevator Co., 30th and Walnut Sts., Atlantic Elevator Co., 20th Largura & Co., Clarksburg, W. Va.; C. O. Sutherland, 115 E. 4th St., Mt. Vernon, N. Y.; Samford Bros., 301 Washington Ave., Montgomery, Ala.; Lovering-Longzotham Co., Ann Arbor Trust Bldg., Ann Arbor, Mich.; H. G. Christman Co., South Bend, Ind.; Pike & Cook, 416 S. 5th St., Minneapolis, Minn.; Henry J. Spieker Co., Elm and Utica Sts., Toledo, O.; S. Heller Elevator Co., Milwaukee, Wis.; Elevator Locks Co., 119 N. Washington St., Peeria, Ill. General Electric Co., Schnectady, N. Y.; Otis Elevator Co., Haughton Elevator & Machine Co., Vermont Bldg., A. B. See Elevator Co., 14th & 24 Sts., N. W., all Washington, D. C. 3-24

Sts. N. W., all Washington, D. C. 3-24

La., New Orleans—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Apirl 8 for U. S. Marine Hospital. Fellowing estimating: Worsham Bros., Medical Arts Bldg., Knoxville, Tenn.; R. P. Farnsworth & Co., Maritime Bldg.; Thomas H. Brockman, Canal Bank Bldg.; Wm. Wallace, Pere Marquette Bldg.; O. M. Gwin Construction Co., 3503 Fern St., all New Orleans, La.; Geo. A. Fuller Co., 57th and Madison Ave. New York; Batson-Cook Co., West Point, Ga.; United Construction Co., 435 Irwin St., Atlanta, Ga. 3-17

Munsey Bidg., Washington; Smith-Pew Construction Co., 435 Irwin St., Atlanta, Ga.

Md., Baltimore—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids. April 15 construction main building Marine hospital. Following estimating: Clements Contracting Co., 1190 Longwood Ave., Bronx, Seglin Construction Co., 60 E. 42nd St., Federal Construction Corp., 551 5th Ave., MacDonald-Spencer Engineering Co., Graybar Bidg., Agostini Bros., 205 E. 42nd St., Federal Construction Corp., 551 5th Ave., MacDonald-Spencer Engineering Co., Graybar Bidg., Agostini Bros., 205 E. 42nd St., Federal Construction Co., 101 Park Ave., Midland Realty Corp., 60 E. 42 St., Taggert Contracting Corp., 22 E. 40th St., all New York; N. P. Severin. 222 W. Adams St., Ralph Sollitt & Sons Constructing Co., Great Lakes Constructing Co., 333 N. Michigan Ave., Jacobsen Bros., 19 S. LaSalle St., B. W. Construction Co., 720 N. Wabash Ave., all Chicago, III.; Mullan Contracting Co., 3945 Greenmount Ave., Price Construction Co., Ave., Price Construction Co., St., Paul and Franklin Sts., P. C. Streett Engineering Co., 404 St. Paul St., Northeastern Construction Co., 404 St. Paul St., Northeastern Construction Co., 406 Eldorado Ave., Price Construction Co., 406 Eldorado Ave., Price Construction Co., Maryland Trust Bidg., Blaltimore; H. R. Blagg Co., 1229 E. 37d St., Dayton, O.; Theriault Contracting Co., 524 E. Johnson St., Ralph S. Herzog., 10 S. 18th St., McCloskey & Co., 1620 Thompson St., Cramp & Co., Denekla Bidg., F. W. Mark Construction Co., Commercial Trust Bidg., John McShain, 1610 North St., McCornick-Lenham Co., 40th and Chestnut St., all Philadelphia, Pa.; John W. Cowper Co., National Press Bidg., National Construction Co., Tower Bidg., Skinker & Garrett, 1719 I St., N. W., United Construction Co., Munsey Bidg., all Washington St., Reading, Pa.; Lee Paschall, American National Bank Bidg., Richmond, Va., Rust Engineering Co., Koppers Bidg., Pittsburgh, Pa.; Murch Bros. Constructing Co., St. Louis Mo.; Karno-Smith Co., Broad St

Md., Chestertown—New Kent & Upper Queens General Hospital, Rev. John White,

Chestertown, R. R. No. 2, plans hospital building, Henry Powell Hopkins, Archt. 10 E. Mulberry St., Baltimore. 3-17 Md., Jessups—State Bd. of Welfare, Robert D. Case. Sec., 709 Union Trust Bldg., Baltimore, has low bld for fireproofing roof and floors from J. George Bensel Co., 3005 Shannon Drive, Item No. 1, \$16,917, No. 2, \$20,333, No. 3, \$18,997, No. 4, \$22,490; low bld on steel cells, Van Dorn Iron Works. 2685 E. 79th St., Cleveland, Ohio; Item No. 1, \$2461, No. 2, \$18,98, No. 3, \$35,29, No. 4, \$2303; Henry G. Pering, Court Square Bldg., Archt. & Engr.

Miss., Jackson—Gov. Martin S. Compt.

Archt. & Engr.

3-17

Miss.. Jackson—Gov. Martin S. Connor, has offer of \$259,000 donation from Mrs. Kate Ray Moore, West, Miss., toward erection state charity hospital provided State matches amount; would be known as Henry A. Moore Memorial Hospital; Legislature declined offer.

Okla., Muskogee—Veterans Administration. Arlington Bldg., Washington, has low bid from Charles A. Schiemann, 1529 Rosine St.. Chicago, Ill., heating equipment existing buildings, Veterans' Administration Hospital.

3-10

Contractors, sub-contractors and suppliers of materials are urged to join in helping to stabilize the construction industry. Use the following label on all bids-It has the approval of responsible concerns:

IMPORTANT NOTICE

THIS IS OUR ROCK BOTTOM BID. IT IS NOT PADDED AND WILL NOT STAND A CUT.

S. C., Anderson—Anderson County Hospital, reported, plans building new nurses home; cost \$25,000. Duke foundation to pay half of cost; Dr. Frank Wrenn, Pres. hospital association.

Tenn., Memphis—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids April 11 for Marine Hospital. Following estimating: Worsham Bros., Medical Arts Bldg., Knoxville. Tenn.; Goode Construction Co., 11 E. 5th St., Charlotte, N. C.; Consolidated Contractors, 843 Vance Ave., Meers & Wallenta, 63 S. Third St.; ForcumJames Co., 843 Vance Ave., S. W. Construction Co., Shrine Bldg., H. J. Gilbertson Const. Co., 211 Farnsworth Bldg., all Memphis, Tenn.; General Engineering Corp., McCathcy Bldg., Upper Darby, Pa.; P. R. Lewis Construction Co., Box 1261, Huntington, W. Va.; M. E. Gilliox, Broadway Hotel Bldg., Monett, Mo.

Hotels and Apartments

D. C., Washington-See Store Buildings.

Miscellaneous

Md., Baltimore—Thomas Mullen, 3945 Greenmount Ave., reported, contractor for Casino Ice Palace, North Ave., near Charles St.; brick, 1-story; Oliver B. Wight, Mun-sey Bldg., Archt.

Md., Hagerstown—Potomac Synod of the Reformed church, reported, purchased site for home for aged men and women; plans re-modeling; Dr. Scott R. Wahner, Hagerstown, head of comm.

S. C., Greenville—J. Roddy Lanigan and Zimmerman, Chandler and Caine, Beattle Bldg., plan Greenville Mart Bldg.; will let contract about April 1; Beacham & Le-grande, Archts.

Schools

Ga., Atlanta—Fulton County Bd. of Education created advisory comn.; Supt. Jere A. Wells, Chmn.. Hal Hentz, of Hentz, Adler & Shutze, Candler Bldg., and Cherry Emerson, of Robert & Co., Engrs., Bona Allen Bldg., for enlarging County schools. Following architects chosen: Hentz, Adler & Shultze, annexes, North Fulton High School, cost \$125.000; Robert & Co., annex to E. Rivers school, cost \$20,000, and Hammond school, \$22,500;

Daniell & Beutell, Georgia Sanier Sav. Bank Bldg., new building, Bolton, \$22,500; George H. Bond, Candler Bldg., annex. College St. School, Hapsville, \$15,000; Tucker and Howell, Rhodes-Haverty Bldg., consolidation of Liberty Hill and Guinn schools, \$12,500; Edwards and Sayward, 101 Marietta St.s Lakewood Heights school, \$45,000; E. C. Wachendorff. Standard Bldg., Parkerson school, \$20,000; Burge & Stevens, 101 Marietta St., N. W., West Haven school, \$12,500; William J. J. Chase, 104 Pinetree St., N. W. Hope school, \$20,000.

Ga., Macon—Bibb County Bd. of Education, Walter P. Jones, Supt. of School, opens bids April 11, Alexander IV school in Ingleside, cost \$55,000.

Ga., Warrenton—Warren County, Bd. of Education, C. S. Fitzpatrick, Chmn., plan erecting Negro school, in Warrenton and Jewel Ware county school, 1-story each. 6 rooms and auditorium, brick, veneer comp. roofing, wood floors, cost \$12,000.

Md., Annapolis — Anne Arundel County School Commrs., George Fox., Supt., will build high school building near Mount Zion, 17 mi. south of Annapolis; Dr. Albert H. Cook, State Supt. of Education.

Md., Baltimore — Public Improvement Comn., H. J. Leimbach, City Hall, Bd. of Awards, reported, plans 2-story and basement brick school building, cost \$425,000; Machen & Dixon, 312 N. Charles St., Archt., Henry Adams, Calvert Bldg., Mech. Engr., W. Waters Pagon, Lexington Bldg., Struc. Engr.

Miss., Leesville—Vernon Parish School Board, Finly Stanly, Sec., opens bids April 21, 2-story rein. conc. brick and stone trim high school building; Jones. Roessle, Olsch-ner & Werner, Archts., Ardis Bldg., Shreve-port, La.

Mo., Mountain Grove—City, Bd. of Education, plans election on \$50,000 to \$55,000 school bldg, bonds.

Mo., Tarkio—Tarkio College, Robert N. Montgomery, Pres., advises, report college plans erecting new Science bidg., is incor-rect.

rect.

Tex., College Station—Texas A. & M. College, plans \$60,000 swimming pool, 127x100: rein. conc. walls, roof supported by steel trusses; locker rooms, shower rooms, drying rooms, footbaths and storage facilities; Dr. F. E. Gieske, College Archt., College Station.

3-17

Tex.. Mineral—Board of Education, Howard Yoward, Pres., plans 1-story grade school, cost \$10,000: 4 class rooms and Auditorium. T-shape, brick and rein. conc., metal lath and plaster; Olin Boese & Thomas Thompson. Archts., 801 Builders Exchange Bldg., San Antonio.

Tex., San Antonio—School Board voted set aside portion of George W. Brackridge Senior School for Junior College use; plans re-modeling.

Va., Covington—Alleghany County, Bd. of School Supvrs. plans voting on \$40,000 bond issue and \$45,000 temporary loan to improve issue ar schools.

Va., Lynchburg—City County authorized construction to start immediately on graded school in Western area of city; estimated cost \$80,000; R. W. Hart, City Mgr. 3-17

Stores

Ark., Pine Bluff—J. J. Newberry Co., reported, erect \$45,000 building, Main St., between Third and Fourth Sts., 2-story brick.
D. C., Washington—Kass Realty Co., 15th & E Sts., N. W., reported, will erect five 1-story stone and brick store buildings, 5th St, and Florida Ave., N. E., in Union Market Terminal; estimated cost \$40,000; owner will build

D. C., Washington—Michael Heilman has permit erect 2-story brick store and apartment building 5601-05 First St., N. W., cost \$13,000.

Ga., Athens—S. E. Varner. Standard Bldg.. Atlanta, soon receive bids alterations and repairs store building, on Jackson St., 2-stories, 30x80.

Ga., Valdosta — W. T. Grant Co., 1441
Broadway, New York, reported erect store
building on Patterson St.
Tex., Beaumont—George J. Barrett, 1918
Wheeler St., Houston, reported, erect store
building Mariposa St. and McFaddin Ave.,
estimated cost \$20,000.

Theatres

Ga., Swainsboro—W. E. Vann, reported, plans rebuilding theatre recently destroyed by fire, stucco front, brick walls, frame roof construction, on steel girders, approved accoustical treatment; Arthur Hazard, Archt., Augusta.

Md., Baltimore—Harlem Theatre Co., 614-18 N. Gilmor St., opens bid March 31, brick and stone theatre building. Following biding: L. Schoenlein & Son, 3006 Parkside Ave., Davis Construction Co., 9 W. Chase St.; Henry A. Knott, 2107 N. Charles St., Consolidated Engd. Co., 20 E. Franklin St.; Cogswell Construction Co., 406 Park Ave.;

Henry L. Maas & Sons, 1119 Ensor St.; Charles L. Stockhsauen, 33 S. Gay St.; P. C. Street Engineering Co., 404 St. Paul St. Wilson P. Smith, American Bldg., Archt.

Tex., San Angelo—John D. Jones, Mgr., R. J. R. Theatres purchase lot, S. E. Corner West Bouregard and Jefferson St.; reported plans building theatre.

BUILDING CONTRACTS AWARDED

Churches

Ga., Glenville—H. P. Bacon, Glenville, has contract for new Methodist church bldg.; auditorium to seat 500, 12 Sunday school rooms, brick walls.

La., Lockport—J. A. Haase, Jr., Contrept Union St., New Orleans, has contract construction new rectory, Holy Saviour Roman Catholic Church; National Sash & Doo Co., Inc., 600 N. Dupre St., New Orleans has contract for millwork; Wm. R. Burk Archt., Balter Bldg., New Orleans 3-2

Archt., Balter Bldg., New Orleans.

3-24

Md., Baltimore—St. Benedict's R. C.

Church, Rev. Aloysius Luther, pastor, let contract to Frainie Bros., 19 W. Franklin St., at \$100,000, 1-story building 2600-36 Wilkens Ave., 154x71; vapor heat. Following subcontracts let: Granite, Clough & Molloy, Harford Rd. and B. & O. tracks; steel and ornamental iron, Maryland Steel Products Co., Standard Oil Bldg.; lumber, P. M. Wamble; plumbing and heating, Rausch & McCauley, 2501 W. Lombard St., all Baltimore; granite columns, Interstate Granite Corp., 611 W. Seventh St., Charlotte, N. C. 12-10

Md., Baltimore—Following subcontracts let on \$175,000 superstructure of Pro-Cathedral unit of proposed cathedral group: Limestone, Indiana Limestone Co., Bedford, Ind.; granite, Perry Bros., Concord, N. H.; windows, screens and hardware, International Casement Co., Jamestown, N. Y.; slate, tile, and marble, American Tile & Cement Co., 27 W. North Ave.; plastering, Ernest Brannock, 1624 Eutaw Pl.; sheet metal and roofing, William E. Cotton & Co., 1525 Lamont Ave.; dampproofing, Edward Rarch, 10 W. Chase St.; hard burned common brick, Burns & Russell Co., American Bldg.; partition tile and hollow brick, United Clay Products Co., Inc., Munsey Bldg.; sand and gravel, Arundel Corp., Pler 2, Pratt St.; lumber, Mattingly Lumber Co., Pier 6, Pratt St.; cement, Robert S. Green, Calloway and Liberty Heights Aves.; cement, Carson-Stanwood Supply Co., Segvoia and Wabash Ave.; hauling, George Transfer Co., Inc., 1201 S. Paca St., all Boltimore; base stone and backing stone, Harry C. Campbell & Sons, Towson; face stone, Mailonee Bros., Pikesville. Frohman, Robb & Little, Archts., 726 Jackson Place, Washington, D. C., M. A. Long, Contr., 10 W. Chase St., Baltimore.

12-24

Va., Luray—Mims & Speake, Luray, have

Va., Luray—Mims & Speake, Luray, have contract to rebuild Methodist Episcopal Church of native blue limestone; ventilating and furnace contract, J. T. Campbell; cost \$35,000.

City and County

W. Va., Clarksburg—James & Law Co., 217 W. Main St., Clarksburg, has contract for wood furniture for Harrison County court house at \$45,999 and Watson Manufacturing Co., Jamestown, N. Y., at \$23,342. for metal furniture; Palace Furniture Co., 168 W. Main St., Clarksburg, floor covering, \$8,345. 3-10

Dwellings

D. C., Washington—Waverly Taylor, Inc., 1522 K St., N. W., has permit four 2-story brick and stone dwellings, 4447-53 Volta Pl., N. W., cost \$43,000.

Fla., Miami Beach—William Williams has permit erect residence, 4465 N. Meridian Ave., cost \$25,000; Lester Avery, Archt.; Harborn Construction Corp., Contr.

Hardorn Construction Corp., Contr.
Fla., St. Petersburg—Eric T. Clausen,
Contr., has contract at \$20,000 for residence
for V. H. Pace; Elliott B. Hadley, Hadley
and Nordstrum Archts. and Engr.
La., New Orleans—M. Baar. 2009 Broadway, has permit for 1 and 2-story frame,
house, 32x73, tile roof, cost \$14,000; E. L.
Market, Contr., 3838 Louisiana Ave. Parkway.

Md. Baltimore — American Building Co., Inc., Bldr., 5449 Jonquil St., has permit for two 2-story dwellings with garage, 5425-27 Jonquil Ave., cost \$8000.

Okla., Tulsa—M. W. Turner, Commercial Bldg., erect 2-story stone veneer residence, 32x46, oak floors, cost \$15,000; D. C. Walters, Commercial Bldg., Archt.

Va., Buchanan—Dr. M. S. Stimette erect English type residence, cost \$15,000; Alba K. Simmons, 109 First St., S. W., Roanoke, Va., Archt.

Va., Wytheville—Nat Pennelton erect Colonial residence, cost \$12,000; Alba K. Simmons, 109 First St., S. W., Roanoke, Va.,

Government and State

Ala., Montgomery—Otis Elevator Co., 810 18th St., N. W., Washington, has contract, \$33,529, for elevators, U. S. post office; Al-gernon Blair, Montgomery, gen. contr.

Ala., Montgomery—Connors Steel Co., Empire Bldg., Birmingham, has centract 290 tons rein. steel U. S. post office, Algernon Blair, First National Bank Bldg., Montgomery, Gen. Contr.

ery, Gen. Contr.

Ark., Tex., Texarkana—Westinghouse Electric Elevator Co., 1500 N. Branch St., Chicago, Ill., has contract, elevator plant U. S. post office; Gauger Construction Co., Fidelity Bank Bldg., Memphis, Gen. Contr. 3-10

D. C., Washington—Architect of the Capitol., David Lynn, let contract to Jacobson Bros., 19 S. La Salle St., Chicago, Ill., \$1,-123,000, for addition to Library of Congress; Pierson & Wilson, Archts., 1621 Connecticut Ave.; Alex B. Troybridge, Consit. Engr., 1028 Connecticut Ave.

Fla., St. Petersburg—Allen Roofing & Sheet

Fla., St. Petersburg—Allen Roofing & Sheet Metal Work, Inc., 215 S. Rome, Ave., Tampa, has contract roofing and sheet metal work, Veterans Administration Home: James I. Barnes, Gen. Contr., Barnes Bldg., Logans-port, Ind., and Springfield, O. 3-10

Ga., Albany—Following sub-contracts let on U. S. Post office building: Rubber-covered wire, General Electric Co., Schenectady, N. Y.; switchboard, Trumbull Electric Mfg. Co., Plainville, Conn.; conduit and fittings. flush switches and boxes, Steel City Electric Co., 1207-1221 Columbus Ave., Pittsburgh, Pa.; lighting fixtures, Victor S. Pearlman & Co., 533 Wabash Ave., Chicago, Ill.; plumbing, Standard Sanitary Mfg. Co., 4415 Enclid Ave., Cleveland, Ohio; sump pump, Chicago Pump Co., 2337 Wolfram St., Chicago, Ill.; electric water cooler, Frigidiare Corp., General Motors Bidg., Detroit, Mich.; boiler, Kewanne Boiler Co., Franklin St. and 2 tracks, Kewanee, Ill.; tube radiators, American Radiator Co., 1807 Elmwood Ave., Buffalo, N. Y.; nonconducting covering for heating and plumbing, Johns-Manville, 292 Madison Ave., New York; wall radiators, American Radiator Co.; angle brass pipe, American Brass Co., Waterbury, Conn. General Engineering Corp., Gen. Contr., Upper Darby, Pa. 12-24

Okla., Okmulgee—Following sub-contracts and School of the School of the

Conn. General Engineering Corp., Gen. Contr., Upper Darby, Pa. 12-24

Okla., Okmulgee—Following sub-contracts let on U. S., post office building: Millwork, North St. Louis Planning Mill Co., 3641 Carter St., St. Louis, Mo.; brick, Kusa Brick Co., Kusa, Okla., stone, A. J. Thompson Stone Co., Ellettsville, Ind.; steel, Des Moines Steel Co., Des Moines, Iowa; wiring, Hanna Corp. and painting, Albert Wittrin Co., 1604 S. Boulder St., both Tulsa, Okla.; marble. Vermont Marble Co. of Texas, 1513 Wall St., Dallas, Tex.; tile, Standard Roofing & Material Co., 24th and Broadway, and Terrazzo, American Terrazzo & Tile Co., both Oklahoma City: misc. iron, Des Moines, Iowa; sheet metal and roofing. Acme Roofing Co., 5 Lower Wetumpka Rd., Montgomery, Ala.; hardware, Russell & Frwin, New Britton, Conn. Algernon Blair, First Natl. Bank Bldg., Montgomery, Ala., gen. contr. 2-25

Tenn., Elizabethton—Following Sub-con-

rery, Ala., gen. contr.

2-25

Tenn., Elizabethton—Following sub-contracts let on U. S. post office: Plumbing fixtures, Crane Co., 836 S. Michigan Ave., Chicago, III.; indirect water heater, Taco Heaters, Inc., 342 Madison Ave., New York: coal water heaters U. S. Radiator Corp., 1056 First Natl. Bank Bidg., Detroit, Mich.; pressure-reducing valves on water supply. H. Mueller Mfg. Co.; boilers, Titusville Iron Works Co., Titusville, Pa.; electric water coolers, Frigidaire Corp., General Motors Bidg., Detroit, Mich.; tube radiators and wall radiators, U. S. Radiator Corp.; non-conductive covering for heating and plumbing, Johns Manville, 292 Madison Ave., New York; angle radiator valves. Marsh Valve Co., Dunkirk, N. Y.; air mains, Hoffman Specialty Co., 193 Grand St., Waterburg, Conn.; feeder panel, Bull Dog Electric Prodnets Co., 7610 Jos. Campan Ave., Detroit, Mich.; flush switches, Bryant Electric Co.,

Bridgeport, Conn.; lighting fixtures, H. A. Framburg & Co., 3320 Carroll St., Chicago, Ill. C. A. Morrison & Son, Shelby, N. C. Gen, Contr.

Tex., Georgetown — McKays Co., 473 N. Cleveland Ave., St. Paul, Minn., has contract for water softener at U. S. post office; Landis & Young, Georgetown, Tex., Gen. Contr. 11-5

W. Va., Elkins—Following sub-contracts let on U. S. post office: Distribution panels, Cleveland Switchboard Co., 2925 E. 79th St., Cleveland, Ohio; flush switches, General Elec-tric Co., Schenectady, N. Y.; rubber-covered wire, Hazard Insulated Wire Works, Wilkes-Barre, Pa. P. W. Johnson, Portsmouth, Ohio, Gen. Contr. 3-24

Hospitals, Sanitoriums, Etc.

Hospitals, Sanitoriums, Etc.

Ala., Mobile—Connors Steel Co., Empire Bldg., Birmingham, has contract 125 tons conc. bars, Marine Hospital; Algernon Blair, Montgomery, Gen. Contr.

Ark., North Little Rock, Little Rock—Nelson Electric Co., Fort Scott, Kansas, has contract at \$30,000, for electric distribution system, U. S. Veterans' Administration hospital; William Peterson, Contr., 1121 Donoghey Bldg., Little Rock.

3-17

Tex., Galveston—Following sub-contracts on officers quarters building 4 and 5 Marine Hospital: Plumbing fixtures, Crane Co., S36 S. Michigan Ave., Chicago, Ill.; brass pipe, Chase Brass & Copper Co., Waterburg, Conn.; gas water heaters, storage type automatic. Crane Co.; electric drinking for plumbing, Philip Carey Mfg. Co., Lockland, Ohio; hot water bollers, column and wall radiators and radiator valves. Crane Co.; flush switches, Harvey Hubbell, Inc., Cor. Bostwick Ave. & State St., Bridgeport, Conn.; glassware, Jefferson Glass Co., Follonshee, W. Va.; sockets, Hart & Hegemann Div. Hart & Hegemann Electric Co., 342 Capital St., Hartford, Conn.; lighting fixtures, Edwin F. Guth Co., 2615-25 Washington St., Dallas, Tex., Gen. Contr. 12-17

Hotels and Apartments

D. C., Washington—Zarin & Korman, Builder, 730-15th St., N. W., reported, erect apartment 7302-6 Georgia Ave., three 2-story brick, tin roof, hot water heat, cost \$25,000; Geo. T. Santmyers, Archt., 925-15th St., N. W.

Mo., Camdenton—Hoffman-Jacobs Construction Co., Kansas City, reported has contract for hotel for J. M. Bunch, Judge County Court; concrete structure, 75 rooms, exterior brick and terra cotta; Victor J. Defoe, 114 W. 10th St., Kansas City, Archt.

Miscellaneous

Mo., St. Louis—H. B. Deal & Co., Inc., 1218 Ikuve St., has contract 4-story convent building, 5021 Northland Ave., estimated cost \$60,000; struc. steel frame, conc. slabs, Bedford stone front, interior halls terra cotta finish, brick sidewalks, Terrazzo and cement finish floors, Barrett roof, concrete foundations: equipment and furnishings to cost \$20,000; Aegerter and Bailey, Railway Exchange Bldg., St. Louis, Archt.

Va., Newport News—James River Country Club let contract to J. W. Davis, Law Bldg., Newport News, at \$48,000, 2-story club building, fireproof floorfs, brick and tile walls, open wood trusses, maple and mastic tilfoors, asbestos shingle roofing, conc. foundations; A. Byron Williams, C. & M. Bank Bldg.

Schools

Ala., Anniston—Calhoun County Commrs. let contract to L. A. Slaughter, Oxford, Ala., \$12,414, construction Weaver High School bldg., brick veneer.

La., Shreveport.—The Beard Corp., Shreveport, has contract for fabricating steel for proposed steel athletic stadium, Centenary College; cost \$20,000 to \$25,000; E. M. Freeman, Engr., 1135 Janther St.

Tox. Austin, Pagerd of Pagents University

College; cost \$20,000 to \$20,000; E. M. Freeman, Engr., 1135 Janther St. 3-17

Tex., Austin—Board of Regents, University of Texas, reported let contract to J. F. Johnson, Austin, \$118,600, construction Littlefield Memorial, on University Campus.

Tex., Austin—Following sub-contracts let on library, Physics and Union Bldg., University of Texas: slate blackboards, Library & Physics Bldg., Walcott, Maisey & Page, West Bldg., Houston; gravel & sand, three bldgs., Robinson Sand & Gravel, Austin; structural steel and iron, three bldgs., Virginia Bridge & Iron Co. of Tenn., Kirby Bldg., Dallas, Tex.; waterproofing, damproofing and caulking, 3 bldgs., A. C. Horn Co., of Texas, 3000 Junior St., Dallas; accousitcal treatment 3 bldgs., R. V. Aycock & Co., 2107 Griffin St., Dallas; lumber and Lone Star cement, 3 bldgs., Kuntz-Sternenberg Lumber Co., Austin; rein. steel 3 bldgs.

H. A. Chicago, N. C., 12-24 473 N. Contracte; Lan-Contr., 11-5 cacts lets, 9th St., al Elec-covered Wilkessmouth, 3-24

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Build-apart-brick, ; Geo. N. W. n. w. onstruc-ontract County exterior oe, 114

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Concrete Engineering Co., Construction Industries Bldg., Dallas; excavation and grading, 3 bldgs., Tom Archer & Co., 208 Bourline St., Fort Worth. P. O. B. Montgomery, Bldrs.-Engrs., Construction Industries Bldg.

Va., Boonsboro — Bedford County School Board, J. A. G. Shipley, Div. Supt., let contract to J. W. Stout Co., Inc., Sanford, N. C., \$10,250 brick school; 102x61; hardwood floors, flat roof; Raymond V. Long, State Bd. of Education, Richmond, Va., Archt. 2-24

Stores

Ga., Atlanta—Collins, Hoddbronk & Collins, Citizens & Southern Bank Bldg., reported, has contract, store building, Nunnally Co., 86 Edgewood Ave., N. E., to be

located 664 Peachtree St., 1-story and basement, 125 x 26, conc. foundations, concrete terrazzo floor, plate glass, ornamental iron, metal trim, brick piers, metal windows and doors, metal lath and plaster, marble base trim, stone trim, 10-yr. Barrett built-up roofing: Geo. Harwell Bond, Archt., Candler Bldo.

La., New Orleans—Lionel F. Favret, 937 Gravier St., has contract, \$15,000, remodeling brick store building for C. A. Cody, 131-33 Caronedelet St., A. S. Montz, archt. 2-11

Md., Baltimore—H. L. Shevitz, 746 Washington Blyd., let contract 3-story brick store building, Charles J. Spielman, 1928 Annapolis Road, Westport, at \$10,000.

Okla., Enid-J. L. Curreathers reported let contract to McMillan Construction Co., at

\$125,000 for 6-story store and office building; brick, steel and rein, conc. construction; E. H. Eads & Co., archts.

Okla., Enid—Dr. Lee Cotton, First Natl. Bank Bldg., let contract to D. C. Bass & Sons, \$25,000; brick construction; 1-story, 25x140; Roy W. Shaw, Archt., Bass Bldg. 3-3

Tex., Houston—Houston Structural Steel Co., 3910 Washington St., has contract 100 ones fabricated structural steel for store for C. Weingarten, Inc., 808 Prairie St. 3-24

Warehouses

Ga., Moultrie—Colquitt County Tobacco Co. let contract for warehouse, Huber Construction Co., Moultrie; 156,000 sq. ft. floor space; T. F. Lockwood, Columbus, Archt. 3:24

WANT Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety. SECTION Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety. SECTION Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety. SECTION Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety. SECTION Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials and equipment and kinds of materials and equipment municipalities, firms and individuals for machinery, materials, supplies and construction work.

Machinery and Supplies

Building Materials

THE CLASSIFICATIONS IN THIS SECTION ARE:

Bids Asked

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Air Compressor.—Angle Blackford Co., 1314 Nashville Trust Bldg., Nashville, Tenn. —Wants small electric air compressor cap-able of furnishing air for 2 stone mason's chipping hammers.

Canning Equipment.—James E. Horne Co (Mchy. Dealer), 39 Jefferson St., Savannah. Ga.—Wants prices and data on canning equipment for berries, and tomatoes (juice and canned), in glass and tin.

Condensers.—C. G. Bullock (Mchy. Dealer), 601 Martin Bldg., Birmingham, Ala.—Wants prices and data on 2000-sq. ft. surface condenser, complete with pumps and fittings, and two 1000-sq. ft. surface condensers, complete with pumps and fittings.

Creosoting Machinery.—W. E. Harkness, Ocala, Fla.—Wants prices and data from manufacturers of machinery for creosoting ties and poles.

Derricks.—D. C. Elphinstone (Construction Equipment), 115 S. Calvert St., Baltimore, Md.—Wants prices and data on 3-drum steam hoist and swinger; also, guy derrick, 100-ft. boom, with capacity of 5 tons at 90-ft. radius.

Engine (Steam) .- See Generator Set.

Generator Set.—P. O. West, 114 12th Pl., N., Birmingham, Ala.—Wants prices and data on 225 to 275-ky-a., a. c. generator, 3 phase, 60 cycle, 440, 550 or 2300 volts, with switchboard and direct connected to Uniflow steam engine, Skinner or Nordberg unit preferred.

Generator Set.—C. G. Bullock, 601 Martin Bldg., Birmingham. Ala.—Wants prices and data on high speed automatic steam engine direct connected to 125-kw. or 150 kv., 125volt, d. c. generator.

Motors.—W. M. Smith & Co. (Mchy, Dealer), Box 1709, Birmingham, Ala.—Wants prices and data on two 100-h. p. synchronizing motors, 3 phase, 60 cycle, 550 volts, 900 to 1200 r. p. m.; one 150-h. p. synchronizing motor, 3 phase, 60 cycle, 550 volts, 900 to 1200 r. p. m., with starting switch and rails.

Refrigerator Parts—Refrigerator Distributing Co., P. O. Box 327, Atlanta, Ga.—Wants prices and data from manufacturers of refrigerator cabinets suitable for small household electric refrigerators; will purchase cabinets and install refrigeration units; also wants prices and data on compressors, evaporators, expansion valves, condensers, cold controls, refrigeration valves and and other accessories which go to make up complete household refrigerator; will purchase in quantity. quantity.

Skimmer Scoop Attachment (Crane).—Gen-ral Utilities Co., Inc. (Mchy. Dealer), 254-56 W. Tazewell St., Norfolk, Va.—Wants rices and data on skimmer scoop attach-tent for Model 400 P&H crane.

Equitable Equipment Co., Inc. (Mchy. Dealer), 410 Camp St., New Orleans, La.—Wants prices and data on:
(1) Cut-off Saw—straight line, automatic

- (2) Log Skidder—gasoline operated, line haul approx. 1000 ft., for skidding small logs; probably consider steam operated
 (3) Mortise and Tenon Machine—for cutting mortise and tenon cleats, completely motorized.

Machinery Record, Hackley Morrison (Mchy, Dealer), Mutual Bldg., Richmond, Va.—Wants prices and data on: (1) Clam Shell Bucket—1 yd., with teeth (2) Pile Hammer—6000 lb., steam.

Pee Dee Coffee Co., Rockingham, N. C.—Wants prices and data on:
(1) Air Storage Tanks—tested to 250 lb. size, approx. 20x60 in.
(2) Belting (Leather)—55 ft. of 8 in.
(3) Generator—7½ kv-a. 220 volt, 3 phase, 60 cycle, complete
(4) Pipe—25 20-ft. lengths of 2-in. extra heavy, black; 800 ft. 1¼-in. with couplings.

R. E. Boggs (Mchy. Dealer), Comer Bldg., Birmingham, Ala.—Wants prices and data. including location, fuel consumption per unit, etc., on following:

(1) Boilers—2—350 h. p., water tube, B. & W., straight tube type preferred: must have complete data as to auxiliary equipment and type of firing

(2) Engines—500 h. p., Unaflow, or high type engine showing economical consumption of steam; 600 h. p. steam engine or turbine, showing low consumption of steam, condensing or non-condensing

(3) Electric Generating Units—325 to 350-kw., direct connected, Unaflow preferred, condensing or non-condensing; 325 to 350-kw., direct connected, Unaflow preferred, condensing or non-condensing; direct connected oil engine, full Diesel, 150 kw.

Evans Mills, Inc. (Cotton Gin and Corn

Evans Mills, Inc. (Cotton Gin and Corn Meal and Feed Products), Z. W. Evans, Sec., Edenton, N. C.—Wants following:
(1) Hammer Mill—No. 2 or 3
(2) Mixer—1 ton capacity.

Medley Mfg. Co., Columbus, Ga.—Wants prices and data on following:

(1) Engine Lathe—10, 12 or 14 in., quick change, high speed

(2) Grinder—for straight or taper work, with 36 to 40 in. between centers, with 6 to 10-in. swing, equipped with compound pump

welder—butt, for 220 volt, 60 cycle, single or 2 phase, a. c., capacity up to 11/4 in. round stock.

Moss Chemical Co., Offices Dalton, Ga., plant, Chatsworth, Ga.—Wants following:
(1) Bagging Machinery—sacking and weighing 100, 50 and 200 lb, bags
(2) Pulverizing Machinery—fine grinding.

T. M. Francis (Engr.), 334 Brown-Mark Bldg.. Birmingham, Ala.—Wants prices and data on following:
(1) Boiler—350 to 400 h. p., water tube, 200 lb. working pressure
(2) Generators—200 kw.. uniflow or Diesel, 60 cycle, 2300 volts, 350 kw., steam driven, direct connected, or 500 h. p. engine, uniflow preferred.

Miscellaneous

Pipe.-See Machinery and Supplies.

Pipe (Wood Stave).—The Sycamore Mills, Inc., Col. W. D. Adams, Pres., Old Fort, X. C.—Wants 1200 ft. of 26-in, woodstave pipe.

G. & W. Mfg. Co., Inc. (Neckwear Mfrs.), Loft Bldg., Lynchburg, Va.—Wants prices and data on: (1) Cord—braided, or sash cord, about 1 to 4 in. wide, such as is used in laundry

bags (2) Osnaburg Material—7 oz.

Bids Asked

Air Compressor.—Dist. Commrs., Dist. Bldg., Washington, D. C.—Bids Apr. 11 for gasoline-driven, portable air compressor for Sewer Dept.

Aircraft Finders.—U. S. Coast Guard Hendquarters, Washington, D. C.—Bids Apr. 4 for aircraft radio direction finders and intermediate frequency receivers in lots of 3 to 7.

Automobile.—Purchasing Officer, Interior Dept., Washington, D. C.—Bids Apr. 5 for automobile for Boise, Idaho.

Automobile Trucks.—Procurement Div., Veterans' Administration, Washington, D. C.—Bids Apr. 4 for 7 automobile trucks, 1½ ton.

Boiler.—U. S. Engr. Office, 1006 BcCall Bldg., Memphis, Tenn.—Bids Apr. 5 for lo-comotive type boiler. Bridges.—State of Texas, 5 bridges. See Construction News—Bridges, Culverts and Viaducts.

Bridges.—State of Florida, 2 bridges. See Construction News—Roads, Streets and Pav-

Bridge. — Kentucky. See Construction fews—Roads, Streets and Paving. Bridges. — State of Missouri, 32 bridges, ee Construction News—Roads, Streets and

Paving.

Bridges.—St Construction -State of Texas, 5 bridges. See n News-Bridges. Culverts and Bridges.—State of Oklahoma, 5 bridges. See Construction News—Roads, Streets and Paving.

Brooms,—Marine Corps, Q. M. Dept. Washington, D. C.—Bids Apr. 11 for 3000 pavement brooms, delivery Philadelphia. Pa. Bridges.—Baltimore, Md. See Construction Bridges.—Baltimore, Md. See Construction ews—Bridges, Culverts and Viaducts.

Brushes (Brass Wire).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 11 for 6000 brass wire brushes, delivery Phila-delphia, Pa.

Building Materials.—Quartermaster. Fort Bliss, Tex.—Bids Apr. 7 for electric supplies, including sockets, switches, transformers, fixtures, cord. condulets, wire, etc., lumber, millwork, hardware, pipe, traps, unions, valves of etc.

Casings.—U. S. Coast Guard Headquarters. Washington, D. C.—Bids Apr. 4 for 2 sets of 5 each automobile casings, 9.00-13 low pressure.

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Mar

Cable, etc.—Office of Ch. of Engrs., U. S. Army, Washington, D. C.—Bids Apr. 6 for 7000 ft. controller cable and 7reels.

Cafeteria Equipment.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Apr. 18 for furnishing and installing fixed permanent equipment for cafeteria at U. S. post office, court house and custom house, Louisville, Ky.

Coal.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 11 for coal, delivery Philadelphia, Pa., and Portsmouth, N. H.

Concrete Floor Paint.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 4 for 100 gal. conc. floor paint, delivery Quantico, Va.

Dredging.—South Carolina. See Construction News—Drainage, Dredging and Irriga

Dredge Hull.—U. S. Engr. Office, 1068 Navy Bldg., Washington, D. C.—Bids Apr. 14 for constructing wooden dredge hull for U. S. Dredge Dalecarlia.

Dynamite, etc.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 4 for 500 lb. dynamite and 500 blasting caps, delivery Quantico, Va.

Electrical Supplies.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 4 for electrical supplies, delivery Philadelphia, Pa.

Elevator.—Supvg. Archt., Treasury Dept., Washington, D. C.—Bids Apr. 18 for passen-ger elevator in marine hospital, Memphis,

Elevator.—Supvg. Archt., Treasury Dept.. Washington, D. C.—Bids Apr. 14 for elevator plant in post office and court house, Chat-tanooga, Tenn.

Electric Lighting System.—See Construc-on News—Airports, Airplane Plants, Etc.

Electrical Supplies.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 6 for electrical supplies, delivery Quantico, Va.

Filing Sections.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 11 for steel filling sections, delivery Washington, D. C.

Fire Extinguisher Equipment.—U. S. Coast Guard Headquarters, Washington, D. C.— Bids Apr. 4 for operating gear carbon diox-ide fire extinguisher equipment.

Gloves.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 20 for 48,000 pr. cotton gloves, delivery Philadelphia, Pa.

cotton gloves, delivery Philadelphia, Pa.

Grease and Oil.—Marine Corps, Q. M.
Dept., Washington, D. C.—Bids Apr. 12 for
grease and oil delivery Philadelphia, Pa.

Guidons.—Marine Corps., Q. M. Dept.,
Washington, D. C.—Bids Apr. 11 for 100 silk
guidons, delivery Philadelphia, Pa.

Hardware, etc.—Marine Corps, Q. M. Dept.,
Washington, D. C.—Bids Apr. 6 for hardware, etc., delivery Quantico, Va.

Hydrogen Gas—Dont of Agriculture, Div.

Hydrogen Gas.—Dept. of Agriculture, Div. of Purchase, Sales and Traffic, Washington, D. C.—Bids Apr. 19 for 154,000 cu. ft. hydrogen gas, f. o. b. factory, as required during fiscal year 1933, within following states: Florida, Alabama, Mississippl, Louisiana, Texas, New Mexico, Colorado, Kansas, Oklahoma and Arkansas.

Improving School Area,—Bd. of Awards, office of City Register, City Hall, Baltimore, dd.—Bids Apr. 6 for improving area around 2ast Baltimore Colored Jr. High School; I. J. Leimbach, Supvg. Engr., Public Improvement Coms. provement Comsn.

Levee.—Memphis, Tenn. See Construction News—Miscellaneous Construction.

Levee.—Arkansas-Mississippl. See Construction News—Miscellaneous Construction.

License Tax Stock.—State Div. of Purchase and Contract, A. S. Brower, Dir., Raleigh, N. C.—Bids Apr. 7 for approx. 200 tons license tag stock.

Lining.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 8 for lining, delivery Philadelphia, Pa.

Linoleum.—Marine Corps, Q. M. De Washington, D. C.—Bids Apr. 4 for 400 yd. battleship linoleum, delivery Quant Va. Quantico,

Mudshell.—Galveston County, I. Predecki, County Aud., Galveston, Tex.—Bids Apr. 15 for 24,000 tons mudshell.

Painting. — Quartermaster Corps, Army Medical Center, Washington, D. C.—Bids Apr. 4 for painting.

Paint.—State Road Dept., H. H. Wells, Chmn., Tallahassee, Fla.—Bids Apr. 4 for approx. 6000 gal. outside white paint, 500 gal. outside yellow, 100 gal. yellow enamel, 1000 gal. aluminum paint.

Projectiles.—Bureau of Ordnance, Navy

Dept., Washington, D. C.—Bids Apr. 14 for 10,000 3-in. 23 illuminating and 150 5-in. A. A. common projectiles.

Road.—Fort Smith, Ark. See Const tion News—Roads, Streets and Paving.

Roads.—State of Maryland, 5 roads. Seconstruction News-Roads, Streets and Pay-

Road Materials.—State Dept. of Highways, C. S. Mullen, Ch. Engr., State Office Bldg., Richmond, Va.—Bids April 5 for 12,447,000 gal. surface treatment and cold patch bitum. materials.

Roads.—State of Kentucky, S roads. See Construction News—Roads, Streets and Pav-

Road.—Florida. See Construction News—Roads, Streets and Paving.

Road.—Parris Island, S. C. See Construction News—Roads, Streets and Paving.

Roads.—State of Oklahoma, 4 roads. See Construction News—Roads, Streets and Paving.

Roads.—State of Missouri, 64 roads. See Construction News—Roads, Streets and Pav-

Roads. — State of Texas, 12 roads. See Construction News—Roads, Streets and Pav-

Rope and Twine.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 15 for 9000 lb. manila rope and 800 lb. sail twine, delivery Philadelphia, Pa.

Sewer Construction.—F. E. Ross, City Engr., Jefferson City, Mo.—Bids April 4 for labor and material for constructing sewers in Dist. No. 50; 14,700 ft. of 8-in. c. i. pipe; ditching and back filling; manholes; conc. encasing; gravel pavement repairing; etc.

Shades.—Constructing Quartermaster, Fort Benning, Ga.—Bids Apr. 15 for shades for barrack building.

Roller.—Marine Corps. O. M. Dorte.

Roller.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 11 for spike roller, delivery Quantico, Va.

Stone.—Georgia. See Construction News-Roads, Streets and Paving.

Storage Batteries.—State Bd. of Control, Austin, Tex.—Bids Apr. 4 for storage batteries for all state departments and institu-tions.

Carriers.—Marine Con Target Carriers.—Marine Corps, Q. S., Dept., Washington, D. C.—Bids Apr. 4 for 20 steel target carriers, delivery Quantico,

Theodolite Repairs.—Div. of Purchases and and Sales, Dept. of Commerce, Washington, D. C.—Bids Apr. 5 for repair of 3 7-in. Berger theodolites.

Timber.—State Road Dept., H. H. Wells, Chmn., Tallahassee, Fla.—Bids Apr. 4 for untreated timber.

Tower and Shelter.—Office of Corps Area Engr., Headquarters Third Corps Area, 311 St. Paul Pl., Baltimore, Md.—Bids Apr. 15 for fabricating and delivering all materials, and performing all work of constructing rigid steel tower and shelter, Fort Monroe, Va.

Va.

Towboat Repairs.—U. S. Engr. Office, Huntington, W. Va.—Bids Apr. 13 for repairing steel hull steam towboat.

Trucks and Chassis.—State Road Dept., H. H. Wells, Chmn., Tallahassee, Fla.—Bids Apr. 4 for twelve 1½-ton trucks, equipped with standard closed cabs, tires 34x7 rear, 32x6 front, heavy duty h. p., hydraulic heavy duty hoist, steel dump body not less than 7x5 ft. 6 in. x. 12 in.; two 1½-ton truck chassis, equipped with standard closed cab, tires 34x7 rear, 32x6 front, heavy duty h. p.; six 1½-ton truck chassis, equipped with 34x7 tires rear, 32x6 front, heavy duty h. p.; 1931 or 1932 models. 34x7 tires rear, 32x6 f p.; 1931 or 1932 models.

Valves.—Gen. Pur. Officer, Panama Canal, Washington, D. C.—Bids April 4 (bids postponed from Mar. 21) for butterfly valves, etc., for Madden Dam, Sch. 2725.

Ventilators.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Apr. 4 for 5 ventilators, delivery Quantico, Va.

Ventilating System.—U. S. Army Motion Picture Service, 458 State, War and Navy Bldg., Washington, D. C.—Bids Apr. 7 for 15 to 35 coaling and ventilating systems as required during period ending Dec. 31, 1932.

Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Apr. 13 for following, Sch. 27:

Mechanical load brakes and electric motors with solenoid brakes and control equipment for 3-ton hoists for Pacific locks over-

Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Apr. 12 for follow-ing, Sch. 2741: Tractor-mower, manganese-steel dipper lips, pipe and fittings, range boilers, sani-

tary fixtures, water-closet siphons, gate valves, cocks, dies, leather belting, packing leather, chamois skins, hectograph paste, garnet paper, emery cloth, roofing copper and window operating hardware.

Bureau of Supplies and Accounts, Navy lept., Washington, D. C.—Bids until dates, elivery as indicated, for:

Container Bodies—6500, Baldwin, L. I., N. Y., Apr. 12

Fuse Covers and Strips—soldering—Ports. mouth, Va., and Mare Island, Calif., Apr. 19

mouth, Apr. 19

Apr. 19 Lumber—box and crate, 300,000 ft., Nor-folk, Va., Apr. 12 Stop Watches—aircraft, navigational, 50,

stop Watches—aircraft, navigational, 50, Apr. 12
Pipe Cutting and Threading Machines—motor driven, and spare parts, various east and west coast points, Apr. 19
Steel Tubing—Portsmouth, N. H., and Mare Island, Calif., Apr. 5
Towels—huckaback, white, 50,400, Brooklyn, N. Y., Apr. 5
Aircraft Cable and Thimbles—Baldwin, L. I., N. Y., Apr. 12
Electrodes—welding, covered, various east and west coast points, Apr. 12
Cleaning Brushes—casting and platers—various east and west coast points, Apr. 12
Sound Transmitting Equipment—and spare parts, various east and west coast points, Apr. 19
Lathe Chucks—4 jaw, universal independ.

Apr. 19
Lathe Chucks—4 jaw, universal independent, 3, San Diego, Calif., Apr. 12
Pump—horizontal, centrifugal, New York, N. Y., or San Francisco, Calif., Apr. 12
Accelerometers—aircraft, 35, Philadelphia, Pa., Apr. 12
Steel—plate, boiler, Puget Sound, Wash, Apr. 5.

Trade Literature

Lubrication .- The Texas Company, New York, producers of Texaco petroleum products, has issued the March number of Lubrication, a technical publication devoted to selection and use of lubricants. This issue of the magazine features an article on Measured Lubrication.

Steel Sheet Piling.—The Carnegie Steel Company, Pittsburgh, Pa., has issued a loose-leaf bulletin covering a report on the condition of steel sheet piling after 19 years' service in the Monongahela River at Pittsburgh. This bulletin has been printed to permit insertion in the Carnegie Steel Sheet Piling Book, a publication recently issued.

Moto-Mixers and Agitators.—The Chain Belt Company, Milwaukee, Wis., has issued catalog No. 211, devoted to Rex Moto-Mixers and Agitators for 1932. Designed to meet the needs of three general types of ready-mixed plants-dry, wet and shrink plants-these units are described in detail in the catalog and their various applications shown.

Citrus Industry .- The Mission Times, published at Mission, Tex., has issued its Third Annual Citrus Number, a publication in magazine form of nearly 100 pages, devoted to the citrus growing industry of the Lower Rio Grande Valley, in which it is estimated there are 7,000,000 growing citrus trees, covering an acreage in excess of 100,000 acres. The publication, attractively illustrated, presents a number of articles on various phases of the citrus industry and carries a large number of advertisements pertinent to it.

Opens Baltimore Office

E. H. Purdy, registered patent attorney and member of the District of Columbia bar, announces the opening of an office at 1004 Lexington Building, Baltimore, for service to manufacturers and inventors in connection with patent matters.

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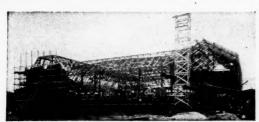
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STRUCTURAL BIRMINGHAMALAL STEE



Photograph shows construction work on new gymnasium for Rutgers University at New Brunswick, New Jersey, using Ingalls structural steel. York & Sawyer, New York City, architects.

Inquiries solicited for all kinds of structural steel, standard buildings, bridges and steel shapes.

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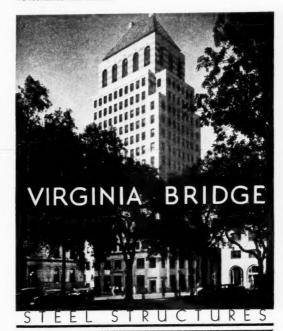
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INDUSTRIAL NEWS

United States Steel Report

For the fiscal year ended December 31, 1931. total earnings of the United States Steel Corporation and its subsidiary companies amounted to \$46,483,999.93 after deducting all expenses incident to operations, including repairs and maintenance of approximately \$60,000,000, and taxes, including reserve for Federal income taxes, but exclusive of inventory price adjustments at December 31, amounting to \$5,395,996.32, charged against previously established reserves. After deduction of charges and allowances for depletion, depreciation and obsolescence of \$47,317,894,72. ere was a deficit of \$833,894.79. Adding to this, the sum of \$5,469,623.85 for interest, there was a total deficit of \$6,303,518.64. Special income for the year arising from profits in sales of fixed property, and net adjustments of various accounts, amounted to \$19,341,659.51, leaving a net income for the year of \$13,038,140.87. The company paid dividends during the year of \$25,219,677 on 7 per cent preferred stock and \$36,983,949.50 on common 41/4 per cent stock, making a total of \$62,203,626.50. This left a net deficit for 1931 (provided from undivided surplus) of 849,165,485,63,

Subsidiaries of the company operated at 50 per cent of capacity during the first quarter of 1931, but there was a steady decline thereafter which reached the extreme low figure of 24 per cent in December. The average for the year was 38 per cent, compared with an average of 65.6 per cent in 1930. Production of the several principal departments of the corporation for the year, compared with the preceding year, was as follows: Iron, manganese and zinc ores, 13,600,716 tons, compared with 24,295,103; limestone, dolomite, fluorspar and cement rock, 7,673,718 tons, compared with 14,611,927 coal, 15,779,298 tons compared with 25,388,265 tons; coke, 7,040.832 tons, compared with 13,113,382 tons; pig iron, ferro and spiegel, 7,021,507 tons, compared with 12,758, 333 tons; steel ingots (Bessemer and open hearth), 10,082,398 tons, compared with 16,-726,472 tons; rolled and finished steel products for sale, 7,196,017 tons, compared with 11,609,265 tons; Portland cement, 15,050,996 barrels, compared with 24,294,154 barrels.

At January 1, 1932, available rated annual capacity of subsidiary companies in the following lines of production was: Blast furnaces (pig iron, ferro, etc.) 21,846,700 tons; steel ingots and castings 27,841,300 tons, and finished steel products for sale, 19,647,000 tons.

The total value of business for the year was \$452,665,506 for domestic sales, not including inter-company sales, as compared with \$702,488,579 for 1930, and \$40,207,210 for export sales, as compared with \$64,634,265 for 1930, making a total of \$492,872,716 for 1931 as compared with \$767,122,844 for 1930.

William A. Irvin was recently elected president of the United States Steel Corporation to succeed James A. Farrell, who is retiring.

New York Life Insurance Company

In a report of the company's business, Thomas A. Buckner, president of the New York Life Insurance Company, New York, declares that life insurance companies in general have not been surpassed in the field of safe investing and that their record of the past two years has added to their prestige. During 1931, askets of the company increased by more than \$101,000,000, with a gain in total income of \$21,944,989. On December 31, 1931, total assets amounted to \$1,890,144,880 and liabilities to \$1,770,472,137.

Joins Northwest Engineering

The Northwest Engineering Co., Chicago, announces that R. W. Cornelison has joined the organization as field sales manager. With a wide acquaintance among dealers and contractors throughout the country, he has had extensive experience in the application and sale of construction machinery. The Northwest Engineering Co. is one of the world's largest exclusive builders of shovels, cranes. draglines, pull-shovels and skimmer-scoops.

FWD Earnings

Directors of the Four Wheel Drive Auto Company, Clintonville, Wis., have authorized payment of the regular semi-annual cash dividend, this action marking the completion of another successful year for FWD. A financial report of the company for 1931 shows earnings of \$4.66 per share after setting aside reserves for depreciation, taxes and emergencies. The FWD plant operated 8 hours a day, with practically a full crew during the year, and at times employed additional men on a three-shift basis.

Becomes Naval Stores Consultant

J. E. Lockwood, connected for the past 12 years with naval stores activities of the Hercules Powder Company. Wilmington. Del., has announced his resignation, effective April 1. Mr. Lockwood, who has been active in naval stores work for 24 years, plans to open an office in Savannah, Ga., as a con-

sulting engineer, specializing on naval stores problems and their solution and naval stores possibilities and their development. He has been retained by the Hercules Powder Company as consultant to act in an advisory capacity in respect to naval stores activities. In 1908 Mr. Lockwood took part in the development of the Yaryan process of producing naval stores and built the first plants for this type of production.

Corrosion-Resisting Metal Compound

The Stibloy Products Company, Inc., with principal offices in the Koppers Building, Pittsburgh, has taken over the assets of Liquid Metal Products, Inc., Chicago, producers and distributors, under the Arent patents, of Stibloy-a metal compound in liquid form, which acts as a primary coating to hold paint, enamel and lacquer, permitting immediate finishing of new galvanized metal surfaces. Stibloy was developed to extend the life of galvanized surfaces by protecting them from the effects of atmospheric conditions and from damage caused by exposure to gases, acid fumes, smoke and brine. Applied to poster panels and paint bulletins Stibloy guarantees permanent adhesion for paint, lacquer and paper on the fronts of signs, and retards corrosion on the backs. Officers of the Stibloy Products Company, Inc., control of which has been acquired by the Koppers Products Company, are: President, J. N. Forker; vice-president, S. H. Bell; secretary, John D. Shaner, and treasurer, S. T. Brown. Stibloy will be manufactured in various plants of the Koppers Products Company and full information will be available at district offices of the company.

Southeastern Stock Bank

Montgomery, Ala.—For promoting agricultural interests of Alabama by encouraging the development of the livestock industry, the Southeastern Livestock Loan Company has been projected here and is expected to be functioning within 30 days. With a capital stock of \$250,000, the new company will be able to extend loans up to \$2,000,000, it is declared, with the aid of privileges afforded by the Federal Intermediate Credit Bank, together with additional privileges available under the recent Walsh-Jones Act of Congress. An organization committee was appointed for the institution at a state-wide meeting of financial and industrial leaders here several weeks ago. This committee is composed of Wiley Alford, retired farmer and capitalist, Columbia; Col. A. B. Alldredge, president of Southeastern Fuel Company, Birmingham; Harry E. Snow, president of Montgomery Chamber of Commerce and head of the Union Stockyards here; I. Fred Solomon, wholesale merchant, and J. B. Barnett, both of Montgomery. It is explained that the name of the company, as selected, was for the reason that eventually it is expected to serve other Southeastern states, as well as Alabama. Jesse B. Hearin, secretary of the Montgomery Chamber of Commerce, was designated by the committee to receive subscriptions temporarily. The first meeting of stockholders is expected to be held not later than April 10.

\$4,000,000 Federal Building

Washington, D. C.—The Treasury Department, Jas. A. Wetmore, Acting Supervising Architect, postponed date of opening bids on the proposed extension and remodeling of the post office building here, from March 29 to April 8. Construction under this contract will not include elevators, dumbwaiters, lighting fixtures, etc. Bids on elevators will be opened April 13. An appropriation of \$4,000,000 is available for the project. Graham, Anderson, Probst & White, Chicago, are the architects.

\$14,000,000 Kentucky Bonds

Frankfort, Ky.—The House of Delegates has passed the Gaines-Munford bill authorizing the issuance of bonds by the State of Kentucky to fund over a 20-year period its floating debt of approximately \$14,000.000. The bill, which has already been passed by the Senate, now goes to the Governor for his approval, and it is understood the latter will sign it. The bonds would bear an interest rate of 5 per cent.

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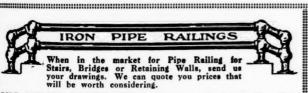
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\$7,500,000 IN NEW INDUS-TRIES

North Carolina Made Progress in 1931

Raleigh, N. C.—North Carolina made progress in her industrial expansion last year, according to the State Department of Conservation and Development. A total of 178 new industries and expansions of existing plants was recorded during the year, representing an estimated investment of \$7,500,000. Of the total number of projects established, 102 were new plants and 76 additions to mills and factories already in operation.

Conservation officials point out a decided trend toward plants for the production of finished goods in the classification of new enterprises, with at least four-fifths of the number having been placed in this group. Classified according to the nature of their products, new industries established in 1931 include: Food, 28; textiles other than hosiery, 15; hosiery, 12; furniture, 8; chemicals, drugs and laboratories, 7; clothing, 5; lumber and wood products, 5; fertilizer, 4; laundries 2, ice plants, 2, and mining companies, stone, broom, cigar and oil plants. More than one-third the additions were made to hosiery mills, 29 having been in this classification; several additions were made to other types of textile mills; ten furniture plants were enlarged, and three food plants and a similar number of clothing factories. Remaining additions were made to various industries.

In addition to replacements last year, the installation of new textile machinery is estimated to have involved \$3,360,000, while construction in the state exceeded \$28,000,000.

\$517,000 Miami River Dredging

Miami, Fla. - Contract has been awarded by the United States District Engineer, Lt.-Col. L. V. Frazier, Jacksonville, to the Standard Dredging Company, New York, at \$517,000, to widen and deepen the Miami River from its mouth to N. W. Thirty-sixth street, and a contract for removing buildings and obstructions to J. O. Webster, Miami Beach. The Clark Dredging Company has already begun operations. According to War Department specifications, the uniform depth of the river will be 15 feet for the entire 51/2 miles, with a width of 150 feet from the mouth of the river to a point 3 miles northwest; from that point for 11/8 miles, 125 feet, and from there to the N. W. Thirty-sixth Street bridge, a distance of 1% miles, 90 feet. T. P. Pearson is engineer in charge for the Standard Dredging Company. Bids will soon be invited for various additional work which the city must perform, such as additional fire and police facilities, street railway and power cables across the river for the protection of bridges and fender replacement on bridges, etc., to cost about \$20,000.

Handkerchiefs for Navy

Greenville, S. C.—The Southern Handkerchief Manufacturing Company of this city has received an order from the Government for supplying the Navy with a large number of handkerchiefs during the next year.

\$1,000,000 County Bonds

Rockville, Md.—Bids will be opened April 5 by the Montgomery County Commissioners for the purchase of \$1,000,000 bonds, including \$520,000 highway bonds and \$480,000 school bonds, both issues to bear an interest rate of 5 per cent.

Galveston Airport Operating

Galveston, Tex.—The new municipal aviation field here, equipped at a cost of \$25,000, was placed in operation on March 17, an American Airways mail plane from Dallas being the first commercial plane to reach the field. Formal celebration to mark the opening of the airport is planned for April.

\$1,122,000 Houston Construction

Houston, Tex.—There is now under construction in Houston, or just completed, a total of \$1,122,400 worth of building, most of which was started or completed since February 15, according to the Houston Chamber of Commerce. The list covers store buildings, warehouses, bridges, park shelter house, fire station and a group of five residences averaging in cost about \$11,000 each. It is pointed out that in the course of a single day, March 16, permits were issued for \$125,000 worth of construction.

THE UNION PACIFIC RAILROAD reported a net income gain last month of 25 per cent over the corresponding month of 1931. Another encouraging feature of the road's monthly statement was that gross revenues were off only 5.5 per cent from January, 1932, while in February, 1931, gross revenues were off 12.6 per cent from the preceding month. The February statement reflected the benefits to the road of the recent wage reduction and further economies in operation and maintenance. For the month, operating expenses were down to \$6,696,000, a decline of 26 per cent from the corresponding month in 1931.

INDUSTRIAL CORPORA. TION PROFITS

Comparison of 1931 With 1929 Makes Better Showing Than 1921 With 1920

Aggregate earnings for 1931 of 379 representative industrial corporations were 78.09 per cent less than for the peak year 1929; but in 1921, as compared with 1920, the decline shown by the same companies was 91.64 per cent, according to compilations from published reports as announced by Ernst & Ernst, public accountants.

The study includes all industrial corporations whose figures are available for 1929 and 1931 and also for 1920 and 1921, 379 in all, classified into 17 industrial lines and miscellaneous.

The deflation of the 1920-1921 depression period, it is pointed out, took place principally in the year 1921, although in certain cases at least a portion of it was in 1920. Approximate adjustments for these and other factors indicate that the study represents a conservative statement of the aggregate shrinkage in corporation earnings for the 1920-1921 depression.

For comparison of 1931 with 1930, published figures are available from 1389 industrials, whose aggregate earnings for 1931 were \$628,341,000, a decrease of 61.17 per cent from the aggregate of \$1,618,025,000 reported by the same companies for 1930. Better operating results in 1931 than in 1930 are shown by 359 of these companies, or 25.8 per cent. Operating profits were made in 1931 by 846 or 61 per cent, while 543 or 39 per cent showed losses. A similar compilation covering the companies whose figures are available for the year 1921 discloses that the proportion of companies showing profit or loss is approximately the same.

Net operating income of 171 railroads for 1931 was 39.98 per cent under 1930; operating income of 104 telephone companies for 11 months of 1931 was 1.04 per cent better than for 11 months of 1930; profits of 199 other public utilities, 1931, were 8.78 per cent less than for 1930.

Aggregate profits for all groups, 1863 companies, in 1931, compared with 1930 were 38.91 per cent less.

In dealing with actual earnings figures over a considerable period of years, it is of course impossible, the statement says, to make adjustments which adequately reflect certain changes brought about through mergers, consolidations, etc. The resulting comparison, however, can reasonably be assumed to reflect trends correctly, though the factor of mergers may magnify or lessen the extent of the trends.

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FINANCIAL NEWS

Bond Issues Proposed

Ala., Tuskegee—Macon County Bd. of Revenue, John H. Drakeford, Chmn., hold special election May 3 on \$160,000 funding

Ga., Columbus—City, Henry B. Crawford, City Mgr., has high bid from J. H. Hilsman & Co. and Citizens & Southern Co., Atlanta, at \$24,422.42 and accrued interest for \$24,000, 5% street improvement bonds.

La., New Orleans—Mayor T. Semmes Walmsley introduced to City Comsn. Coun-cil ordinance calling special \$750.000 bond issue election May 3 to provide funds for New Orleans Welfare Committee.

Md. Rockville—Montgomery County Commrs., Lacy Shaw, Pres., opens bids Apr. 5 for \$1,000,000, 5%, \$1000 denom. bonds: \$520,000, road; \$480,000, school. 3-17

\$520,000, road; \$480,000, school. 3-17

Mo., Mountain Grove—City, Bd. of Education, plans electeion on \$50,000 to \$55,000 school bldg. bonds.

N. C., Charlotte—City Council offer \$10,-000 street bonds, through Local Government Comsn., Chas. M. Johnson, Sec., Raleigh.

N. C., Greensboro—Guilford County Commrs. passed resolution for issuance of \$250.-000 refunding bonds.

N. C., Newton—Catawba County Commrs. decided to place \$95,000 bonds on market, subject to approval of Local Government Comsn., Raleigh.

Tenn., Bristol—City, T. J. Burrow, Commr. of Finance, opens bids Apr. 5 for \$20,000, 6%, \$1000 denom. waterworks refunding bonds, Series "Gg."

Tenn., Nashville—State Funding Bd., Roy C. Wallace, State Controller, opens bids Apr. 4 for \$9,000,000, 6% refunding bonds; proceeds to retire highway notes.

Tex., Perryton—Ochiltree County votes Apr. 16 on \$400,000 highway bonds.

Tex., Sherwood—Irion County voted \$50,000, 5% 30-year serial road improvement bonds.

Tex., White Deer — Town plans issuing \$25,000, 6% refunding bonds.

Va., Covington—Alleganey County School Bd., Office of Supt. of Schools, Court House, opens bids Apr. 6 for \$40,000, 10-20's, 6% bonds.

Va., Covington—Alleghany County Supvrs. approved plans for issuing \$40,000 school bonds.

Va., Hampton—City, Robert M. Newton. Supt. of Schools, opens bids Apr. 6 for \$129.500, \$1000 denom., not to exceed 6% bonds: \$5,000, school; \$44,500, school re-

Bond Issues Sold

Md., Towson, Baltimore—Baltimore County Commrs., John R. Haut, Ch. Clk., sold \$250,-000, 4½%, \$1000 denom., road and school bonds of 1932 to syndicate headed by Chase Harris Forbes Corp., New York, at 101.782. 3-3

Mo. Princeton—City, G. W. Miller, Clk., sold \$35,000 waterworks bonds to National Bank & Trust Co., Kansas City, as 5½s.

Tex., Brownwood—City sold \$90,000, 5½%, \$1000 denom. funding bonds to Brown-Crummer Co., Wichita, Kans.

Va., Danville—City, Carlton B. Strange, City Aud. and Clk., sold \$60,000, 4½% refunding bonds to Julian Meade, Danville.

New Financial Corporations

N. C., Greensboro—Oscar Burnett & Co., Inc., formed by Oscar W. Burnett. Pres., Allen C. Ewing, V.-Pres., and Thomas C. Darst, Jr., Sec.-Treas.; general investment securities business.

securities business.

S. C., Marion—Citizens Bank of Marion, capital \$50,000, chartered; J. L. Wheeler, Pres.; L. P. Byars, V.-Pres. and Cashier.

Tex., Kyle—Kyle State Bank, capital \$20,000, chartered; R. R. Kretzmeir, Pres.; Charles B. Wallace, Cashier.

Mason National Bank, J. W. White, Pres., Mason, Tex., and First State Bank, J. D. Eckert, Pres., Mason, merged as Mason National Bank: J. W. White now Chmn. of Bd. and J. D. Eckert, Pres.

First National Bank, J. M. Fleming, Pres., Mount Vernon, Tex., and Planters National Bank Mount Vernon, merged as First National Bank, with G. W. Rutherford, Pres., and J. Mal Moore, Cashier.

Bluefield National Bank, D. E. French.

and J. Mal Moore, Cashier.

Bluefield National Bank, D. E. French,
Pres., Bluefield, W. Va., and Flat Top National Bank, L. E. Tierney, Jr., Pres., Bluefield, merging as National Bank of Bluefield.

First National Bank, C. M. Newton, Pres.,
Dawson, Tex., and Liberty National Bank,
V. L. Sanders, Chmn. of Board, Dawson,
merged as First National Bank of Dawson.

General Electric Employment Plans

While the guarantee of employment or equivalent pay for apparatus works' employes of the General Electric Company, Schenectady, N. Y., will terminate on April

30, in accord with plans announced October 1. 1931, the emergency clause of the unemployment insurance plan will continue and efforts will be made to spread available work as far as possible, according to President Gerard Swope. Employes after May 1 not earning 50 per cent of normal pay, up to \$15 per week, will be eligible for such relief. Since the unemployment emergency was first de clared on December 1, 1930, payments have been made at various times to 19,673 employes, such payments to February 28 totaling \$1,724,000. Half the money is contributed by employes and half by the company. Approximately 34,000 employes of the General Electric Company are holders of G. E. Employes Securities Corporation bonds, of a face value of \$39,000,000.

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should do their utmost to relieve this con-

situation is even more serious in some other places.

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PROPOSALS

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GOOD ROADS



Bids close April 5, 1932.

U. S. ENGINEER OFFICE, FIRST NEW ORLEANS DISTRICT, Poland and Dauphine Streets, New Orleans, La.—Sealed bids in duplicate will be received until 2:00 P. M., April 5, 1932, and then publicly opened, for furnishing all labor and materials and performing all work for dredging a navigation canal along North Fork from Schooner Bayou to the Intracoastal Waterway, comprising approximately 89,700 cubic yards, place measurement, and constructing an earth dam across North Fork, in Vermilton Parish, La. Further information on application.

Bids close April 19, 1932.

Bids close April 19, 1932.

DEPARTMENT OF INTERIOR, Washington, March 23, 1932. Sealed bids in duplicate, subject to plans and specifications therefor, will be received at the Interior Department, Washington, D. C., until 2 p. m., Tuesday, April 19, 1932, for the construction and completion of a clinics building at Freedmen's Hospital, Washington, D. C. Drawings and specifications may be obtained upon application to the Department. A certified check for \$50 payable to the Secretary of the Interior will be required as security for the safe return of plans within ten days after date of opening proposals. Guaranty will be required with each bid to insure execution of the contract, and no bid will be considered unless so guaranteed. The bidders may at their option furnish a guaranty bond, certified check or United States bonds for not less than 10 per cent of the total bid. The right is reserved to reject any or all bids, waive any informality in bids received and accept or reject any item of a bid, unless such bid is qualified by specific limitation. Envelopes containing bids must be sealed, addressed to Secretary of the Interior, Room 6119 Interior Department Building, Washington, D. C., and marked "Bid for construction of clinics building, Freedmen's Hospital, Washington, D. C., to be opened April 19, 1932." John H. Edwards, Assistant Secretary.

Bids close April 19, 1932.

Bids close April 19, 1932.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the Veterans Administration, Room 764, Arlington Building, Washington, D. C., until 2.30 P. M., April 19, 1932, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at VETERANS ADMINISTRATION HOSPITAL, PERRY POINT, MARYLAND, NURSES QUARTERS AND ATTENDANTS QUARTERS. This work will include excavating, roads, walks, grading, reinforced concrete, hollow tile, cast stone, slate stair treads, marble work, terrazzo, floor and wall tile, rubber tile, linoleum floors, iron work, steel stairs, steel shelving and partitions, slate, metal and built-up roofing, roof ventilators, metal lathing, plastering, stucco, carpentry, metal weatherstrips, insect screens, painting, glazing, hardware, plumbing, heating and ventilating, electrical work, and outside service connections and such other items as shown or specified. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Administrator, drawings and specifications may be obtained upon application to the Construction Service, Room 764 Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawings and specifications within ten days after date of opening bids will be required. In case no bid is to be submitted, the return of plans and specifications, as soon as this fact has been determined and before the date for opening bids, is requested. Compliance with the requirement and with the request indicated will be considered in connection with future applications for drawings and specifications.

GENERAL INFORMATION About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday. FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M., Tuesday, forward by night letter or air mail when possible.

THE
DAILY CONSTRUCTION BULLETIN
OF THE
MANUFACTURERS RECORD
Published avery

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close April 28, 1932.

TREASURY DEPARTMENT, Bureau of Engraving and Printing, Washington, D. C., March 17, 1932.—Sealed proposals are invited to furnish this bureau with check paper, postage stamp paper, and internal revenue paper, during the fiscal year beginning July 1, 1932. Contracts will be made only with actual manufacturers of postage stamp and internal revenue paper. Proposals to be received not later than 2 p. m., Thursday, April 28, 1932. Blank forms with specifications for proposals and further information will be furnished on application to A. W. HALL, Director.

Bids close May 6, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 25, 1932.—SEALED BIDS in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., May 6, 1932, for furnishing all labor and materials and performing all work for the construction, completion contract, (except elevators and work under contract, Nos. 1 and 2) of the U. S. department of agriculture extensible building at Washington, D. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Not exceeding six sets of drawings and specifications will be furnished to the prospective bidders upon application therefor, when such applications is accompanied by a deposit of \$50.00 for each set to insure its return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be acceptable. Each bid must be accompanied by a statement of facts in detail of the business and technical organization of the bidder available for the contemplated work, including financial resources and building experience, and no consideration will be given to a bid which is not accompanied by said statement. The right is reserved to reject any bid where an investigation or the evidence submitted by such bidder does not satisfy the contracting officer that such bidder is qualified to carry out properly the terms of the contract. In awarding a contract, consideration will not be given to bidders who have not constructed within the last six years at least one building comparable with the project for which the bid is submitted. The successful bidder will be required to furnish a performance bond of at least 50 per cent of the contract price. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 18, 1932.

Bids close April 18, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C. March 21, 1932.—Sealed bids, in duplicate subject to the conditions contained herein will be publicly opened in this office at 3 p. m., April 18, 1932, for furnishing all labor and materials and performing all work for furnishing and installing fined permanent equipment for a cafeteria at the U. S. post office, court house, and custom house, Louisville, Ky. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the act of March 3, 1931, (Public No. 798). Drawings and specifications may be obtained from the custodian at the building or at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 11, 1932.

Bids close April 11, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C. March 18, 1932.—SEALED BIDS, in diplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 11, 1932, for furnishing all labor and materials and performing all work for the foundations, etc., of the U. 8, post office, court house, etc., at Norfolk, Va. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A WETMORE, Acting Supervising Architect.

Bids close April 26, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C. March 21, 1932.—Sealed bids, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 26, 1932, for furnishing all labor and materials and performing all work for construction (except elevators and lighting fixtures) of the U. S. post office and court house at Knoxville, Ten. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding six sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$50 is made for each set to absure its prompt return. Checks offered a deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 13, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 16, 1932.—SEALED BIDS, in deplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 13, 1932, for furnishing all labor and materials and performing all work for the construction (except elevator and lighting fixtures) of the U. S. post office, etc., at Fort Myers, Fla. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

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Bids close April 19, 1932.

Bids close April 19, 1932.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the Veterans Administration, D. C., until 2.30 P. M., April 19, 1932, and then publicly opened, for furnishing all labor and materials and performing all work required for constructing and finishing complete at VETERANS ADMINISTRATION HOME, TOGUS, MAINE, HOSPITAL BUILDING. This work will include excavating, roads, walks and drainage, reinforced concrete, hollow tile, brickwork, cut stone, architectural terra cotta, slate stair treads, marble work, terrazzo, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, iron work, steel sash, steel stairs, steel shelving, cabinets and partitions, metal and built-up roofing, roof ventilators, skylights, lightning condictors, metal lathing, plastering, sound deadening, carpentry, metal weatherstrips, sinsect screens, linen chute, platform scales, galming, glazing, hardware, plumbing, refigerating, heating and ventilating, electrical work, electric elevators, and outside distribution systems, and such other items as shown or specified. SEPARATE BIDS will be received for (a) General Construction; (b) Plumbing, Heating and Electrical Work; (c) Electric Elevators; and (d) Refrigerating Plant; all as set forth on bld form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the daministrator, drawings and specifications with iten days after date of opening bids will be required. In case no bid is to be submitted, the return of plans and specifications with iten days after date of opening bids will be required. In case no bid is to be submitted, the return of plans and specifications with iten days after date

Bids close May 3, 1932.

Bids close May 3, 1932.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the Veterans Administration, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., May 3, 1932, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at VETERANS ADMINISTRATION HOME, DANVILLE, ILLINOIS, HOSPITAL BUILDING NO. 1. This work will include excavating roads, walks and drainage, reinforced concrete, hollow tile, brickwork, cut stone, slate stair treads, marble work, terrazzo, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, fron work, steel stairs, steel shelving, cabinets and partitions, slate, metal and built-up roofing, roof ventilators, metal lathing, plastering, sound deadening, carpentry, metal weatherstrips, insect screens, platform scales, painting, glazing, hardware, plumbing, refrigerating, heating and ventilating, electrical work, electric elevators, and outside service connections, and such other items as shown or specified. SEPARATE BIDS will be received for (a) General Construction; (b) Plumbing, Heating, Electrical Work; (c) Electric Elevators; and (d) Refrigerating Plant; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Administrator, drawings and specifications may be obtained upon application to the Construction Service, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawing and specifications within ten days after date of opening bids, is required. In case no bid is to be submitted, the return of plans and specifications, as soon as

Bids close April 6, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 8, 1932.—SEALED BIDS, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 6, 1932, for furnishing all labor and materials and performing all work for the construction of the U. S. inspection station at Beecher Falls, Vt. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1981 (Public No. 798). Drawings and specifications, not exceeding 3 sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

PROPOSALS

Bids close April 11, 1932.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., March 11, 1932—SEALED BIDS in duplicate, subject to the conditions contained herein, will be publicly oppened in this office at 3 p. m., April 11, 1932, for furnishing all labor and materials and performing all work for the construction (except pelevator) of the surgical unit and laundry building approach work, underground service lines, laundry equipment, etc., of the U. S. marine hospital at Memphis, Tenn. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798) and executive order of January 19, 1932. Drawings and specifications, not exceeding 3 sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 5, 1932.

\$125,000 Bonds

\$125,000 Bonds

In accordance with law and the terms of an ordinance adopted by the Board of Trustees of the City of Lafayette, Louislana, the governing authority of the said City of Lafayette, Louislana, the said Board of Trustees will receive sealed bids for the purchase of bonds in the sum of One Hundred and Twenty-five Thousand Dollars (\$125,000.00) issued by the City of Lafayette, Louislana, said bonds to bear interest at the maximum rate of six percentum (6%) per annum, payable annually and maturing serially on the first day of March in each year from 1933 to 1957, both inclusive, said bonds to be in denominations of Five Hundred Dollars (\$500.00) each, and were authorized by the City of Lafayette, Louislana, at an election held therein on November 30th, 1931, and are secured by the levy of special taxes in excess of all other taxes sufficient to pay the interest and principal thereof.

All bids for the purchase of said bonds shall be accompanied by a duly certified check in the sum of \$4000.00 payable to the order of the City of Lafayette, Louislana, which amount will be held by the Mayor of the City of Lafayette, Louislana, until the successful bidder is determined, checks of the unsuccessful bidders to be returned to them and the check of the successful bidder to be held as evidence of good faith and to be credited to this bid and in the event of his failure to fulfill the conditions of his bid, the amount of the check to be forfeited by him to the credit of the City of Lafayette, Louislana.

All bids must be addressed to the Mayor of the City of Lafayette, Louislana, with a statement on the envelope that it contains a bid for the bond issue offered, and the said bids will be received until 10 o'clock A. M. Tuesday, April 5th, 1932, at the office of the City Hall in the Court House Building, Lafayette, Louislana, at which time and place they will be opened and read publicly.

The Board of Trustees of the City of Lafayette reserves the right to reject any and all bids.

ROBERT L. MOUTON, Mayor,
City of

Bids close April 8, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 23, 1932.—Notice is hereby given that the time for opening bids for furnishing all labor and materials and performing all work for the extension, remodeling and enlargement (except elevators, dumbwaiter, lighting fixtures, etc.) of the U. S. post office at Washington, D. C., is hereby postponed from 3 p.m. March 29, 1932 to 3 p.m. April 8, 1932. JAS. A. WETMORE, Acting Supervising Architect.

Bids close May 5, 1932.

Bids close May 5, 1932.

TREASURY DEPARTMENT, Bureau of Engraving and Printing, Washington, D. C., March 24, 1932.—Sealed proposals are invited for the sale of ink scrapings, and postage stamp and internal revenue paper trimmings, and for the cleaning of windows during the fiscal year beginning July 1, 1932. Proposals to be received not later than 2. p.m. Thursday, May 5, 1932. Blank forms with specifications for proposals for the several schedules and further information will be furnished on application to A. W. HALL, Director.

Bids close April 5, 1932.

Surface Treatment, Etc.

Richmond, Va.

Sealed Bids will be received at the office of the Virginia Department of Highways, State Office Building, Richmond, Virginia, until 10 a.m., Tuesday, April 5th, 1932, for furnishing 12,447,000 gallons surface treatment and cold patch bituminous materials. Proposal furnished upon request.

Bids close April 5, 1932.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS STATE OF MARYLAND STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building five sections of State Highway as follows:
Baltimore County, Contract No. B-191-42—
One section of state highway along the Old Court Road from the end of contract B-57 at Granite toward the Liberty Road for a distance of 2.10 miles (Macadam Resurfacing)

Cecil County, Contract No. Ce-77-3-23—One section of State Highway along the proposed Elkton Boulevard from Bridge Street to the Blueball Road for a distance of 0.33 miles (Concrete)

Cecil County, Contract No. Ce-83-22—One section of State Highway along the Blueball Road, from the Elkton Boulevard toward Childs for a distance of 0.262 miles (Concrete)

Saint Mary's County, Contract No. SM-90-82—One section of State Highway along the Indian Bridge Road, from a point on the Leonardtown-Great Mills Road near Great Mills toward Glebe's School, for a distance of 0.93 mile (Gravel)

Wicomico County, Contract No. Wi-89-12—Federal Aid Project No. 249-A—One section of State Highway along the Salisbury-Powellville Road, from the end of Contract No. Wi-63 toward Powellville, for a distance of 2.00 miles (Concrete)

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 5th day of April, 1932, at which time and place they will be publicly opened and read. PREQUALIFICATION OF BID-DERS REQUIRED.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00 for each separate project, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check, payable to the State Roads Commission of Maryland, as required by Sec. 6. Chapter 539, Acts of 1931, of the amount as set forth in the proposal form.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

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Bids close April 19, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 19, 1932.—SEALED BIDS, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 19, 1932, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., at Nyack, N. Y. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 20, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 23, 1932.—Sealed bids, in dupnicate subject to the conditions contained herein will be publicly opened in this office at 3 p.m., April 20, 1932, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., at Coatesville, Pa. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding six sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 8, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect. Washington, D. C., March 10, 1932.—SEALED BIDs in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 8, 1932, for furnishing all labor and materials and performing all work for the construction (3rd contract) of personnel quarters, garage, etc. of the U. S. marine hospital at New Opleans, La. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising archited by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.



CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER **POWER, MISCELLANEOUS PROPERTIES**

FOR SALE—30 Million feet choice river swamp hardwoods in South Georgia. Priced to sell. Address No. 9179, care of Manufacturers Record, Baltimore, Md.

FOR QUICK SALE—At \$2.00 per acre, 42,000 acres well located in North Florida—suitable for grazing and turpentining. Enough merchantable timber to liquidate entire purchase price in three or four years. Address No. 9180, care of Manufacturers Record, Baltimore, Md.

TIMBER OPERATION

FOR SALE, LUMBER OPERATION.— Over thirteen hundred acres timber land, virgin forest.—poplar, oak, white pine, etc., also band mill, railroad and equipment, near Parsons. West Va. Property of the late Scheller Brothers, Want to sell as going concern. W. K. Pritt and J. W. Harman, Special Receivers, Parsons, West Va.

MANUFACTURING AND MARKETING

IF YOU HAVE SOMETHING with merit to be made of iron, can manufacture and market same for you. Write P. O. Box 253, Sheffield, Alabama.

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WANT TO BUY Hydro-Electric Power Plants. Oil wells in operation \$50,000,000 and up. Gold-Silver-Lead Mines. Address No. 9175, care of Manufacturers Record.

WE WILL SAVE YOU 40% on construction of your ice and cold storage plant. Many plants designed by us are producing ice under \$2.00 per ton and our cold storage plants eliminate Sunday and night running of compressors. Inquiries solicited. Mayer Construction Co., 3850 Lansdowne Ave., Cincinnati, Ohio.

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We will handle and follow up your customers and prospects by personal calls, mail and telephone; unusual opportunity for manufacturers and business firms to make use of New York (Park Ave.) and Chicago (Jackson Blvd.) offices and services of mail advertising firm, efficiently staffed, equipped with teletypewriter service. Write R. S. TOTH & ASSOCIATES,
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SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 892, National Press Building, Washington, D. C.

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RATES: 30 cents a line each inser-tion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordi-nary length to line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract: 100 lines 28c a line 300 lines 26c a line 500 lines or more 25c a line

ERMS: For transient advertising cash with order; check, post office or express money order or stamps accepted. TERMS:

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

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daylight sprinklered one story factory building of 156,000 sq. ft. including two story
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The Clearing Industrial District.
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wanting services of Sales Organization in Texas. Company located at Forth Worth Texas, with surplus selling organization desires to form connection with one or two reliable manufacturers to handle their products in Texas. This company mainstains Mercantile Agency credit rating of AA 1 and is prepared to exchange proper banking references. Our present business is principally with construction enterprises and railroad companies. Correspondence solicited. Address

P. O. BOX 1312,
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SITUATIONS WANTED

EXECUTIVE, eight years resident Jacksonville, Fla., college man, married, home owner: thirteen years experience—sales, sales promotion, organization and management. Diversified training gained in association with prominent New York engineering and management firm. Thoroughly familiar with Southeastern states, wile acquaintance in contracting, paving and industrial fields, is available for company desiring exceptional representation in Southeastern territory. Address No. 9183, care of Manufacturers Record. Baltimore, Md.

MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service of recognized standards and reputation through which preliminaries are negotiated confidentially for positions of the calibration indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty-two years. Sendonly name and address for details.

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One—75 H. P. Fairbanks-Morse full Diesel
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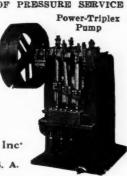
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RIALS.
American Creesote Wks., New Orleans, La. Atlantic Creesoting Co., Norfolk, Va. Ayer & Lord Tie Co., Chicago, Ill. Century Wood Preserving Co., Balto., Md. Eppinger & Russell Co., New York, N. Y. Gulf States Crees. Co., Hattlesburg, Miss. National Lumber & Creesoting Co., Texarkana, Ark.-Tex.

CROSS ARMS, TIES (Creosoted.) American Creosote Wks., New Orleans, La. Atlantic Creosoting Co., Norfolk, Va. Ayer & Lord Tie Co., Chicago, Ill. Century Wood Preserving Co., Balto., Md Eppinger & Russell Co., New York, N. Y.

CRUSHED STONE (Road Con-orete and Ballast.) American Limestone Co., Knexville, Tenn. Boxley & Co., W. W., Roanoke, Va. Culbert & Sons, W. F., Marion, Va.

CRUSHERS (Coal and Coke.)
Fuller Lehigh Co., Fullerton, Pa.
Steward Machine Co., Chas. C., Birmingham, Ala.

——(Rock.)
Gruendler Crusher & Pulverizer Co., St.
Louis, Mo.

CRUSHING and Pulverizing Ma-

chinery.

Alia-Chalmers Mfg. Co., Milwaukee, Wis.
Austin-Western Road Machinery Co., Chicago, Ill.

Fuller Lehigh Co., Fullerton, Pa.

Gruendler Crusher & Pulverizer Co., St.

Louis, Mo.

CULVERT PIPE (Cast Iron.)
Cast Iron Pipe Research Asso., Chicago.
U. S. Pipe & Foundry Co., Burlington,
N. J.

—(Corrugated Metal.)
merican Sheet & Tin Plate Co., Pittsburgh, Pa.

CYLINDERS (Compressed Air, Gas.) National Tube Co., Pittsburgh, Pa.

DESKS (School.) Andrews Co., A. H., Chicago, Ill.

DITCHING MACHINERY. Bay City Shovels, Inc., Bay City, Mich. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio.

DOORS (Cabinet Woodwork.)
Mitchell Mfg. Co., Robert, Cincinnati — (Fireproof, Air Chamber.)
Wilson Corp., The J. G., New York. -(Kalamein and Hollow Metal.) —(Rolling, Steel and Wood.)
Wilson Corp., The J. G., New York. York Safe & Lock Co., York, Penna.

DRAFTSMEN'S SUPPLIES. Weber Co., Inc., F., Philadelphia,

DRAGLINE EXCAVATORS.
Bucyrus-Erie Co., So. Milwaukee, Wis.
National Equipment Corp. (Koehring),
Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shorel Co., Lima, Ohio.

DREDGES (Dipper, Elevator, Hydraulic.) Bay City Shorels, Inc., Bay City, Mich. Bucyrus-Erle Co., So. Milwaukee, Wis.

DREDGING (River and Harbor Improvement.)
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co.. New York.
Shell Producers Co., Tampa, Fla.

DRILLS (Diamond and Shot Core.)
Sprague & Henwood, Inc., Scranton, Pa.
—(Oll and Arteslan Well.)
Virginia Machinery & Well Co., Inc.,
Richmond, Va.

DRINKING FOUNTAINS.
Rundle-Spence Mfg. Co., Milwaukee, Wis.

DYNAMITE (Industrial and Agricultural.)
Du Pont de Nemours & Co., Inc., E. I.,
Wilmington, Del.

ECONOMIZERS (Fuel.)
Babcock & Wilcox Co., New York, N. Y.

ECONOMISTS (Administrative.)
Brookmirs Economic Service, New York.

ELECTRICAL Instruments and Supplies.
General Electric Co., Schenectady, N. Y.
Western Electric Co., New York, N. Y.

ELECTRICAL MACHINERY
(Generators, Motors, etc., New.)
Allis-Chaimers Mfg. Co., Milwaukee, Wis.
Fairbanks, Morse & Co., Chiesgo, Ill.
General Electric Co., Schenectady, N. Y.
Partridge, Arthur S., St. Louis, Mo.
Rockford Power Machy. Co., Rockford, Ill. Y.

(Generators, Motors, etc.,

— (Generators, Motors, etc., Used.)
Delta Equipment Co., Philadelphia, Pa. Electric Service Co., Cincinnati, Ohio. General Electric Co., Schenectady, N. Y. O'Brien Machinery Co., The, Phila, Pa. Reading Engineering Wks., Reading, Pa. Rockford Power Mchy. Co., Rockford, Ill. -Repairing (Motors, Genera-

tors, etc.) Electric Service Co., Cincinnati, Ohio.

ELECTRIC LIGHTING. General Electric Vapor Lamp Co., Hobo-ken. N. J. Westinghouse Lamp Co., New York City.

ELECTRIC SHOVELS (See

ELEVATORS (Electric.)
Millner Co., St. Louis, Mo.

—(Hand and Belt Power.)

ENGINEERS (Airports.) Lockwood Greene Engrs., Inc., New York.

(Appraisal.)
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
White Engineering Corp., J. G., New
York.
Wiedeman and Singleton, Inc., Atlanta.

—(Bridge.)
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hedriek, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Steel & Lebby, Knoxville, Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Wiley & Wilson, Lynchburg, Va.

——(Chemical.)
Dow & Smith, New York, N. Y.
Picard Laboratories, Birmingham, Ala.

Civil.)
Gardner & Howe, Memphis, Tenn.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills and Youngberg, Jacksonville, Fis.
Main, Inc., Chas. T., Boston, Mass.
Saxe, Van Rensselser P., Baitimore, Md.
Spring, Chas. Herbert, Greensboro, N. C.
Steel & Lebby, Knoxville, Tenn.
White Engineering Corp., J. G., New
York.
Wiley & Wilson. Wiley & Wilson, Lynchburg, Va.

Wilson, Lynchourg, Va.

— (Consulting.)
Barstow & Co., W. E., New York City.
Converse & Co., J. B., Mobile, Ala.
Brgineering Service Corp.. Houston, Tex.
Goder, Joseph, Chicago, Ill.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Saxe, Van Rensselaer P., Baltimore, Md.
Smith, Elroy G., Augusta, Ga.
White Engineering Corp., J. G., New
York.
Wiedeman & Singleton, Inc., Atlanta, Ga.

Wiedeman & Singleton, Inc., Atlanta, Ga. Wiley & Wilson, Lynchburg, Va.

---(Cost.) Ernst & Ernst, New York, N. Y.

-(Dams.) — (Dams.)
Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Byllesby Engineering and Management
Corp., Chicago, Ill.
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park Ark Park, Ark, Lee Engineering Corp., William S., Charlotte, N. C. Main, Inc., Chas. T., Boston, Mass. Sirrine & Co., J. E., Greenville, S. C. White Engineering Corp. J. G., New York York. Wiley & Wilson, Lynchburg, Va.

—(Drainage and Irrigation.)
Hills and Youngberg, Jacksonville, Fla.
Huey, S. E., Monroe, La.

——(Efficiency.) Ernst & Ernst, New York, N. Y.

Ernst & Ernst, New York, N. C.

—(Electrical.)
Engineering Service Corp., Houston, Tex.
Lee Engineering Corp., William C., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Webb Electric Co., Anderson, S. C.
Wiley & Wilson, Lynchburg, Va.

(Electric Light and Power.) Plants.)
Barstow & Co., W. S., New York City.
Byllesby Engineering and Management
Corp., Chicago, Ill.

Hall, J. Henry, Lexington, Ky.
Lee Engineering Corp., William S., Chm.
lotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
White Engineering Corp., J. G., No.
York, N. Y.
Wiley & Wilson, Lynchburg, Va.

——(Gas.)

Byllesby Engineering and Managem
Corp., Chicago, Ill.

Huey, S. E., Monroe, La.

——(Geological.) Froehling & Robertson, Inc., Elchmend, Va

-(Harbor Improvements.)
ineering Service Corp., Houston, Tu

——(Heating.) Wiley & Wilson, Lonchburg, Va.

——(Hydraulic.)
Alpaugh & Sons, Chas. W., Manassa, Va.
Main, Inc., Chas. T., Boston, Mass,
Wiley & Wilson, Lynchburg, Va.

Wilson, Lynchourg, Va.

— (Hydro-electric.)
Alpaugh & Sons, Chas. W., Manassas, Ta.
Barstow & Co., W. S., New York Cip.
Byliesty Engineering and Management
Corp., Chicago, Ill.
Hall, J. Henry, Lexington, Ky.
Lee Engineering Corp., William S., Charlotte, N.,
Main, Inc., Chas. T., Boston, Mass.
Sirrine & Co., J. E., Greenville, S. C.
White Engineering Corp., J. G., New
York, N. Y.
Wiley & Wilson, Lynchburg, Va.

——(Ice and Refrigerating.) Engineering Service Corp., Houston

Engineering Service Corp., Houston, Tr.
—(Industrial Plants.)
Barstow & Co., W. S., New York Cip,
Consoer, Older & Quinlan, Inc., Chless
Converse & Co., J. B., Mobile, Als.
Gardner & Howe, Memphis, Tenn.
Hall, J. Henry, Lexington, Ky.
Hills and Youngberg, Jacksonville, Fla.
Lockwood Greene Engris, Inc., New York
Main, Inc., Chas. T., Boston, Mass.
Preacher & Co., Inc., G. Lloyd, Atlanta
Sirrine & Co., J. E., Greenville, S. C.
Smith, Efroy G., Augusta, Ga.
Wiley & Wilson, Lynchburg, Va.

——(Industrial Survey.)
Converse & Co., J. B., Mobile, Ala.
Lockwood Greene Engrs., Inc., New York

— (Inspection and Tests,)
Dow & Smith, New York, N. Y.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
McCallum Inspection Co., Norfolk, Va.
Picard Laboratories, Birmingham, Ala.
Southwestern Laboratories, Ft. Worth, Tu.

——(Lighting.)

Byllesby Engineering and Management Corp., Chicago, Ill.
General Electric Vapor Lamp Ca., Hobeken, N. J.
Westinghouse Lamp Co., New York Cit.
Wiley & Wilson, Lynchburg, Va.

——(Mechanical.)
Engineering Service Corp., Houston, Tu.
Lee Engineering Corp., William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New Yat.
Main, Inc., Chas. T., Boston, Mass.
Wiley & Wilson, Lynchburg, Va.

-(Mining. See Engineers, Ge-

— (Municipal.)
Consoer, Older & Quinlan, Inc., Chicas
Dow & Smith, New York, N. Y.
Harrub Engr. Co., C. N., Nashville, TeaHills and Youngherg, Jacksonville, FitHusy, S. E., Monroe, La.,
McCrary Co., The J. B., Atlanta, Gt.
Wiley & Wilson, Leynchburg, Va.

— (Paving and Roads.)

Dow & Smith, New York, N. Y.

Harrub Engr. Co., C. N., Nashville, Tena.

—(Printing and Newspaper Plants.) eckwood Greene Engrs., Inc., New York

(Public Service Properties.)
Barstow & Co., W. S., New York City.
Bayliesby Engineering and Management
Corp., Chicago, Ill.
Hall, J. Henry, Lexington, Ky.,
Main, Inc., Chas. T., Boston, Mast.
White Engineering Corp., J. G., New
York.

——(Railroad.) Huey, S. E., Monroe, La.

— (Reinforced Concrete Bridge, Buildings, etc.) Gardner & Howe, Memphis, Tenn. Lockwood Greene Engra, Inc., New Yot. Main, Inc., Chas. T., Boston, Mass. Saxe, Van Rensselaer P., Baltimore, Mi Steel & Lebby, Knoxville, Tenn.

— (Sanitary.)
//hitman, Requardt & Smith, Balte, Mi
Filey & Wilson, Lynchburg, Vs. Whitn ——(Sewage Disposal Plants.)
McCrary Co., The J. B., Atlants., Gs.
Wiedeman and Singleton, Inc., Atlants.
Wiley & Wilson, Lynchburg, Vs.

Consoer, Older & Quinlan, Inc., Chicas Hall. J. Henry, Lexington, Ky. Hardaway Contracting Co., Columbus, Ga

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on, Mass. or, Mass. , Manassas, Va. New York City. d Management

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few York City.
Inc., Chicago
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, Tenn.
, Ky.
sonville, Fia.
ac., New York
ton, Mass.
Lloyd, Atlanta,
mylle, S. C.
Ga.
, Va.

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ests.) N. Y. Richmon ond. Va ago, Ill. Norfolk, Va. gham, Ala. 't. Worth, Tex. Management

D Co., Hobe W York City. Houston, Tex.

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anta, Ga. g, Va. s.) I. Y. shville, Tenn spaper ., New York

e Bridges,

Balto., Mt Va. lants.) lanta, Ga. , Atlanta. Va.

Tenn. New York Mass. Itimore, Ma

Barub Engr. Co., C. N., Nashville, Tenn. Hills and Youngberg, Jacksonville, Fla. white Engr. Corp., J. G., New York, White Late.

N. I.

N. I.

N. Singleton, Inc., Atlanta, Ga.

Wiley & Wilson, Lynchburg, Va.

— (Structural.)

Bills and Youngberg Jacksonville, Fla.

Bing, B. E. Monroe, La.

Lackwood Greene Engra., Inc., New York,

Sate, Van Rensselaer P., Baltimore, Md.

Virtinis Bridge & Iron Co., Boanoke, Va.

—(Textile Mills.) Lectrood Greene Engrs., Inc., New York. Main, Inc., Chas. T., Boston, Mass. Sirrins & Co., J. E., Greenville, S. C.

—(Ventilating and Heating.)

—(Water Supply.) Wiley & Wilson, Lynchburg, Va.

ENGINES (Compressed Air.)
Dake Engine Co., Grand Haven, Mich.

—(Diesel Type.)
Fairbanks, Morse & Co., Chicago, Ill.
Superior Engine Co., Springfield, O. —(Gas and Gasoline.) Sterling Engine Co., Buffalo, N. Y.

-(Marine.) Patrbanks, Morse & Co., Chicago, Ill.

—(Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Schoffeld's Sons Co., J. S., Macon, Ga.

ENVELOPES.
Young & Selden Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)
Martin, Joe B., Washington, D. C.
Spring, Chas. Herbert, Greensboro, N. C.

EXCAVATING MACHINERY.
Autin-Western Road Machinery Co., Chicago, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Bucrus-Erie Co., So. Milwaukee, Wis.
National Equipment Corp., (Koehring,
Persons), Milwaukee, Wisconsin.
Northwest Engineering Co., Chicago, Ill.
Oren Bucket Co., The, Cleveland, Ohio.

EXCAVATORS (Clamshell and Orange Peel.)
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.

-(Dragline. See Dragline Ex-

——(Trench.)
Bay City Shorels, Inc., Bay City, Mich.
Buggus-Eric Co., So. Milwaukee, Wis.
Ohio Power Shorel Co., Lima, Ohio .

EXPANSION JOINTS (Road and Sireet.)
Carey Co., Philip, Lockland, Cincinnati,

EXPLOSIVES.
Du Pont de Nemours & Co., Inc., E. I.,
Wilmington, Del.

FACTORY Management Systems. Bust & Ernst, New York, N. Y.

FEED-WATER HEATERS and Purifiers, American Water Softener Co., Phila., Pa. International Filter Co., Chicago, Ill.

FENCING, ENTRANCE GATES (Iron, Steel and Wire.) American Steel and Wire Co., Balto., Md. Atlantic Steel Co., Atlanta, Ga. Ordone Fence Co., Waukegan, Ill.

FENCING (Field and Industrial, Wire Woven.) American Steel and Wire Co., Balto., Md. Ordone Fence Co., Waukegan, Ill. Gulf States Steel Co., Birmingham, Ala.

FERTILIZER Mixing Plants. Gruendler Crusher & Pulverizer Co., St. Louis, Mo.

FILTER (For Domestic and Industrial Purposes.) American Water Softener Co., Phila., Pa. Bacharach & Co., E. W., Kansas City, Ma International Filter Co., Chicago, Ill. Roberts Filter Mfg. Co., Darby (Phila.).

FINANCING.
Bettrie Bond & Share Co., New York.

FIREPROOF Building Material. Bannon Pipe Co., Louisville, Ky.

Doors and Shutters.
Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)
American Steel & Wire Co., Chicago, Ill.
Roebling's Sons Co., John A., Trenton,
N. J.

FLANGES (Iron and Steel.)
Dart Mfg. Co., E. M., Providence, R. I.
U. S. Pipe & Foundry Co., Burlington,
N. J.

FLOOR (Asphalt Mastic.)
Barber Asphalt Co., Philadelphia, Pa. ——(Northern Hard Maple.) Holt Hardwood Co., Oconto, Wis.

——(Open Steel.)
Kerlow Steel Flooring Co., Jersey City,
N. J.

FLOOR Plates and Stair Treads. Central Iron & Steel Co., Harrisburg, Pa.

FLOORING (Laid and Finished.)
Osborne, Earl N., Roanoke, Va.

FORMED PRODUCTS (Roofing.)
American Rolling Mill Co., Middletown, O.

FOUNDRIES and Machine Shops.
General Machine Works, York, Pa.
Glamorgan Pipe & Fdy. Co., Lynchburg,
Va.
Richmond Foundry & Mfg. Co., Richmond, Va.

FOUNDRY Equipment and Sup-Hill & Griffith Co., Cincinnati, O.

FOUNDRY FACINGS (Tale and Soapstone.)
Hill & Griffith Co., Cincinnati, O.

FURNACES (Water-Cooled.)
Fuller Lehigh Co., Fullerton, Pa.

GALVANIZED Products.

Bessemer Galvanizing Works, Birming-Bessemer Galvaniana ham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Enterprise Galvanizing Co., Phila., Pa.

-Steel and Iron. merican Rolling Mill Co., Middletown, O. merican Sheet & Tin Plate Co., Pitts-burgh, Pa.

GAS HOLDERS.
Chattanoga Boller & Tank Co., Chattanoga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
McClintic-Marshall Corp., Bethlehem, Pa.

GAS PRODUCERS.
Wood & Co., R. D., Philadelphia, Pa.

GASOLINE and KEROSENE. Gulf Refining Co., Pittsburgh, Pa.

Earle Gear & Machine Co., Phila., Pa. General Electric Co., Schenectady, N. Y.

GENERATORS, MOTORS (New.) General Electric Co., Schenectady, N. Y.

— (Used.) Guyan Machine Shops, Logan, W. Va O'Brien Machinery Co., Phila., Pa.

GEOLOGISTS. (See Engineers Geological.)

GLASS. (Window.)
Pittsburgh Plate Glass Co., Pittsburgh.

GRADERS (Elevating.)
Austin-Western Road Machinery Co., Chicago, Ill.
Caterpillar Tractor Co., Peoria, Ill.
Gallon Iron Wks. & Mfg. Co., Gallon, O.

GRANITE (Building and Monu-mental.) Gardner Brothers, Salisbury, N. C. North Carolina Granite Corp., The, Mount Airy, N. C.

GRATES and Grate Bars. Schofield's Sons Co., J. S., Macon, Ga.

GRATING (Area, Flooring, Sidewalk.)
Hendrick Mfg. Co., Carbondale, Pa.
Kerlow Steel Flooring Co., Jersey City,
N. J.

GRAVEL (Roofing and Road.) American Limestone Co., Knoxville, Tenn. Arundel Corp., The, Baltimore, Md. Boxley & Co., W. W., Roanoice, Va. Friend & Co., Inc., Petersburg Va. Georgia Sand & Gravel Co., Augusta, Ga.

GREASE Cups. Lunkenheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Co., Inc.,
Long Island City, N. Y.

GRINDERS WHEELS. Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.) National Traffic Guard Co., Atlanta, Ga.

GUNITE CONSTRUCTION. €ement Gun Construction Co., Chicago. Gunite Cone. & Constr. Co., Kansas City. Gunite Constr. Co., New York City.

GUNPOWDER.
Du Pont de Nemours & Co. E. I.,
Wilmington, Del.

GUNS (Hydraulic.) Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Ingalls Iron Works, Birmingham, Ala.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Atlantic, Gulf & Pacific Co., New York.

HEATERS (Asphalt.)
Honhorst Co., Jos., Cincinnati, O.

HEATING Apparatus (Engineers and Contractors.) Poe Piping & Hesting Co., Greenville, S. C.

HOISTS (Chain.)
Cleveland Crane & Engr. Co., Wickliffe, O.
Wright Mfg. Co., Bridgeport, Coan.
—(Electric, Gasoline.)
Dake Engine Co., Grand Haven, Mich. — (Steam.)
Dake Engine Co., Grand Haven, Mich.

HOTELS.
Sauthern Hotel, The, Baltimore, Md.

HYDRANTS (Fire.) Ludlow Valve Mfg. Co., The, Troy, N. Y. Myers & Bros. Co., The, F. E, Ashland, Ohlo Wood & Co., R. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Indus-trial and Commercial Oppor-tunities.) Appalachian Electric Power Co., Roanoke, Va. Crisp County Power Commission, Cor-dele, Ga. Seaboard Public Service Co., Alexandria,

Texas Power & Light Co., Dallas, Texas. INCINERATORS, Brooks-Fisher Co., Atlants, Ga. D-N Corporation, Winston-Salem, N. C. Goder, Joseph, Chicago, Ill.

INCORPORATORS.

Delaware Registration Trust Co., Wilmington, Del.

INSULATING Materials
General Electric Co., Schenectady, N. Y. Quilt. Cabot, Inc., Samuel, Boston, Mass.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York.
Nuveen & Co., John, Chicago.

——(Ingot, for Culverts, etc.)
American Rolling Mill Co., Middletown, O.

JAIL CELLS. Roanoke Iron & Bridge Wks., Roanoke, Va.

JOINTS (Pipe.) Leadite Co., Philadelphia, Pa.

KETTLES (Pavers and Roofers.) Honhorst Co., Jos., Cincinnati, O.

LADDERS (Rolling.)
Myers & Bro. Co., The F. E., Ashland, O.

LAMPS (Incandescent.)
General Electric Vapor Lamp Co., Hobo-General Electric Vapor Lamp Co., Hobo-ken, N. J. Western Electric Co., New York, N. Y. Westinghouse Lamp Co., New York City.

LIGHTING (Factory and Mill.)
General Electric Vapor Lamp Co., Hoboken, N. J.
Westinghouse Lamp Co., New York City. —Fixtures (Electric.)
Western Electric Co., New York City.
Westinghouse Lamp Co., New York City.

LININGS (Flue, Fire Clay.) Lee Clay Products Co., Clearfield, Ky. Owensboro Sewer Pipe Co., Owensboro, Ky.

——(Tube Mill.) Fuller Lehigh Co., Fullerton, Pa.

LITHOGRAPHERS and EN-GRAVERS.
Smith & Son Co., Oscar T., Balto., Md.
Young & Selden Co., Baltimore, Md.

LOADING and UNLOADING
MACHINERY (Portable.)
Northwest Engineering Co., Chicago, Ill.

LOCOMOTIVES. (Gasoline.)
Whitcomb Locomotive Co., Rochelle, Ill.

——(Industrial.)
Southern Iron & Equipment Co., Atlanta.
Whitcomb Locomotive Co., Rochelle, Ill.

——(Mining.)
Whitcomb Locomotive Co., Rochelle, Ill.

——(Bailway.)
Southern Iron & Equipment Co., Atlanta.
Whitcomb Locomotive Co., Rochelle, Ill.

LUBRICANTS.
Gulf Refining Co., Pittsburgh, Pa.

LUBRICATORS (Force Feed.) Lunkenheimer Co., The, Cincinnati, O.

LUMBER (Celling, Flooring, Siding.) Jackson Lumber Co., Lockhart, Ala.

——(Creosoted.)
Amer. Creosote Wks., Inc., New Orleans.
Atlantic Creosoting Co., Norfolk, Vs.
Ayer & Lord Tie Co., Inc., Chicago.
Century Wood Preserving Co., Balto., Md.
Bppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattlesburg, Miss.
National Lumber & Creosoting Co., Texarkans, Ark.-Tex.

——(Hardwoods, Cypress, etc.) Reynolds Bros. Lbr. Co., Albany, Ga.

— (Heavy Construction, Pitch, Pine, etc.) eynolds Bros. Lbr. Co., Albany, Ga.

MACHINERY (Special.)
Bertsch & Co., Cambridge City, Ind.
Earle Gear & Machine Co., Phila., Pa.
General Machine Works, York, Pa.
Gerding Bros., Cincinnati, O.

MACHINERY and Supplies (New and Used.)
Cincinnati Mehry. & Supply Co., Cincinnati. O.
Electric Service Co., Cincinnati. O.hio.
Guyan Machine Shops, Logan, W. Va.
Marine Metal & Supply Co., New York.
O'Brien Machinery Co., The, Philla, Pa.
Partridge, Arthur S., St. Louis, Mo.
Reading Engineering Wks., Reading, Pa.

MACHINE TOOLS. (Used.)
Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.

MAIL CHUTES. Cutler Mail Chute Co., Bochester, N. Y.

MARBLE (Producers and Manufacturers.)
Georgia Marble Co., The, Tate, Ga.

METAL Cutting Machinery. Earle Gear & Machine Co., Phila., Pa.

METAL STAMPING. Gerding Bros., Cincinnati, O.

MIXERS (Hot.)
National Equip. Corp. (Koehring, T. L. Smith, Kwik-Mix), Milwaukee, Wis.

—(Plaster and Mortar.)
inning & Boschert Press Co., Syracuse, N. Y. Jaeger Machine Co., Columbus, Ohio.

MOTORS (Electric.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Armstrong & Bro. Co., R. S., Atlanta, Ga.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Western Electric Co., New York City.

MOTOR TRUCKS.
International Harvester Co. of America,
Inc., Chicago, Ill.

NAILS (Cut.) Reading Iron Co., Reading, Pa.

NAILS and Spikes.

American Steel & Wire Co., Balto., Md.
Tennessee Cosl., Iron & Ratiroad Co.,
Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

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OIL (Fuel and Gas.)
Gulf Refining Co., Pittsburgh, Ps.

Cups.
Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY. Georgia Iron Works, Augusta, Ga.

ORNAMENTAL Bronze Work.

ORNAMENTAL Iron Work. Austin Bros. Bridge Co., Atlanta, Ga. Dietrich Bros., Baltimore, Md. Roanoke Iron & Bridge Wks., Roanoke, Ronnoite Iron & Distage Va.
Va.
Snead Architectural Iron Works, Louisville, Ky.
Virginia Bridge & Iron Co., Roanoke, Va.

ORNAMENTAL Metal Work.
(Bronze, Iron, Steel, etc.)
Cincinnati Mfg. Co., Cincinnati, O.

PAINT (Preservative.)
Cabot. Inc., Samuel, Boston, Mass.

PANELBOARDS.
Adam Electric Co., Frank, St. Louis.

PARTITIONS (Sectionfold, Rolling, Wood.) Wilson Corp., The, J. G., New York.

PATENT ATTORNEYS.
Buck, Sterling P., Washington, D. C.
Coloman, Watson E., Washington, D. C.
Eaton, Paul B., Charlotte, N. C.
Sasnett, Edward C., Washington, D. C.
Seymour & Bright, Washington, D. C.

PATTERNS (Drawing, etc.)
Hass Pattern Co., A. W., Atlanta, Ga

PAVING (Asphaltic Concrete.) Culbert & Sons, W. F., Marion, Va.

PAVING Blocks (Creosoted Wood.)
American Creosote Works, New Orleans.
Ayer & Lord Tie Co., Chicago, Ill.
Century Wood Preserving Co., Balto., Md.

PAVING Mixers.
National Equip. Corp., (Koehring, T. L. Smith), Milwaukee, Wis.

PENSTOCKS.
Chattanoga Boiler & Tank Co., Chattanoga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
Pittsburgh-Des Moines Steel Co., Pittsburgh-Pa.
Smith Co., S. Morgan, York, Pa.

PERFORATED METAL.
Chicago Perforating Co., Chicago, Ill.
Erdle Perforating Co., Bochester, N. Y.
Harrington & King Perf. Co., Chicago.
Hendrick Mfg. Co., Carbondale, Pa.
Manhattan Perforated Metal Co., Inc.,
Long Island City, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.

PETROLEUM REFINERS.
Gulf Refining Co., Pittsburgh, Pa

PIG-IRON.
Tennessee Coal, Iron & Railroad Co.,
Birmingham, Ala.

POSTS, Poles (Creo-National Lumber & Creesoting Co., Texarba, Ark.-Tex.

PILING-(Steel Sheet.) Carnegie Steel Co., Pittsburgh, Pa.

— (Yellow Pine.)
Century Wood Preserving Co., Balto., Md.
Jackson Lumber Co., Lockhart, Ala.

PIPE.
Albert & Davidson Pipe Corp., Brooklyn,
N. Y.
Albert Pipe Sup. Co., Inc., Brooklyn,
N. Y.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Central Pipe & Supply Co., Charleston.
W. Va.
Greenpoint Iron & Pipe Co., Brooklyn,
N. Y. W. v.s.
Greenpoint Iron & Pipe Co.,
N. Y.
Rudson Pipe & Supply Co., Bayonne, N.J.
Maryland Pipe & Steel Corp., Baltimore,
Md. V. Pine Corp., Brookly, N. Y. Md.
McDowell Pipe Corp., Brooklyn, N. Y.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip Co., Pitts-Pittsburgh Piping & Equip Co., Pitts-burgh, Pa. Standard Piping & Fitting Co., Phila. Wides Pipe & Supply Co., Cincinnati, O.

--- (Cast Iron.)
Cast Iron Pipe Research Asso., Chicago.

Glamorgan Pipe & Fdry. Co., Lynchburg, Va. U. S. Pipe & Fdry. Co., Burlington, N.J. ——(Hammer-Welded.) National Tube Co., Pittsburgh, Pa.

— (Iron and Steel, Spiral.

Welded.)
merican Rolling Mill Co., Middletown, O. ——(Second-Hand.)

Albert & Davidson Pipe Corp., Brooklyn,
N. Y. Pipe Sup. Co., Brooklyn, N. Y. d Pipe & Sup. Co., Charleston, Greenpoint Iron & Pipe Co., Brooklyn, N.Y. Hudson Pipe & Supply Co., Bayonne, N. J. Marine Metal & Supply Co., New York.
Maryland Pipe & Steel Corp., Baltimore,
Md. McDowell Pipe Corp., Brooklyn, N. Y. Wides Pipe & Supply Co., Cincinnati, O.

— (Steel.)

Bethlehem Steel Co., Bethlehem, Pa.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Standard Piping & Fitting Co., Phila.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

--- (Wrought Iron.)
Reading Iron Co., Reading, Pa.

PIPE (Fittings.) leorgia Iron Works, Augusta, Ga. tandard Piping & Fitting Co., Phila.

PIPE Machinery. Quinn Wire & Iron Works, Boone, Iowa. Quinn Wire & Iron Works, Boone, Iowa.

— Unions and Joints.

Dart Mig. Co., E. M., Providence, B. I.

— Systems (Industrial.)

Moore Pipe & Sprinkler Co., Jacksonville, Fia.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Standard Piping & Fitting Co., Phila.

PLATES (Steel and Iron.)
American Rolling Mill Co., Middletown, O.
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Fenn.
Guif States Steel Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

POLES—(Tubular, Steel.)
Bessemer Galvanizing Works, Birming-Bessemer Galvanizing Works, D ham, Ala. National Tube Co., Pittsburgh, Pa. ——(Yellow Pine.)
Century Wood Preserving Co., Balto., Md.
Jackson Lumber Co., Lockhart, Ala.

POLISHING MACHINERY.
(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

POSTS (Steel Fence.) Atlantic Steel Co., Atlanta, Ga.

POWER TRANSMISSION MA-CHINERY eld's Sons Co., J. S., Macon, Ga.

PRESSES. (Baling, Cottonseed Oil, Hydraulic and Power.) Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

PRINTERS (Book, Catalog, Job.) Smith & Son Co., Oscar T., Baltimore, Smith & Son Co., Saltimore, Md.
Young & Selden Co., Baltimore, Md.

PULLEYS (Friction Clutch.)
Caldwell Co., Inc., W. E., Louisville, Ky.

PULVERIZED COAL EQUIP-IENT. ier Lehigh Co., Fullerton, Pa.

PULVERIZERS. (See Crushing and Pulverizing Machinery.)

PUMPING MACHINERY. FUBIFING MACHINERY.
Fairbanks, Morse & Co., Chicago, Ill.
La Bour Co., Elkhart, Ind.
Layne & Bowler, Inc., Memphis, Tenn.
Myers & Bro. Co., The F. E., Ashland, O.
Virginia Mchy. & Well Co., Richmond,
Va.

PUMPS (Boiler Feed.)
DeLaval Steam Turbine Co., Trenton, N.J.
Myers & Bro. Co., The F. E., Ashland, O. asyets & Bob. Co., The F. B., Ashnand, O.—
(Centrifugal.)
Allis-Chaimers Mfg. Co., Milwaukee, Wis.
DeLaval Steam Turbine Co., Trenton, N.J.
Fairbanks, Morse & Co., Chicago, Ill.
LaBour Co., Elkhart, Ind.
Layne & Bowler, Inc., Memphis, Tenn. -(Deep Well.) ne & Bowler, Inc., Memphis, Tenn.

— (Hydraulic.)
Dunning & Boschert Press Co., Inc.,
Syracuse, N. Y.

— (Pulverized Coal.)
Fuller Lehigh Co., Fullerton, Pa.

--- (Sand and Dredging.) Georgia Iron Works, Augusta, Ga.

— (Steam.) Fairbanks, Morse & Co., Chicago, Ill. ___(Water Works.)
Layne & Bowler, Inc., Memphis, Tenn.

PUNCHING AND SHEARING.
MACHINERY.
Bertsch & Co., Cambridge City, Ind.
Whitney Metal Tool Co., Rockford, Ill. RADIATOR ENCLOSURES.
Manhattan Perforated Metal Co., Inc.,
Long Island City, N Y

RAILINGS (Iron Pipe.)
Pipe Railing Constr. Co., Long Island
City, N. Y.

RAILROAD Equipment and Supplies (New.) Robinson & Orr, Pittsburgh, Pa.

—Equipment and Supplies.
(Used.)

Dyer Co., W. H., St. Louis, Mo.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.

RAILROAD (Frogs and Switches)
Robinson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Indus-trial, Agricultural and Com-RAILEOADS — (Offering Indus-trial, Agricultural and Com-mercial Opportunities.) Missouri Pacific R. R. St. Louis, Mo. Modol Land Company, Flagler System, St. Augustine, Fla. Norfolk & Western Railway, Roanoke, Va.

RAILS (New and Used.)
Carnegie Steel Co., Pittsburgh, Pa.
Dyer Co., W. H., St. Louis, Mo.
Robinson & Orr., Pittsburgh, Pa.
Smith & Co., W. M., Birmingbam, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co.,
Birmingham, Ala.

RAILWAYS (Marine.)
Charleston Dry Dock and Machine Co.,
Charleston, S. C.

RECEPTACLES (Self-Closing-Waste Paper.) Whitaker Paper Co., Baltimore, Md.

REINFORCING for Concrete.
American Steel and Wire Co., Balto., Md.
Atlantic Steel Co., Atlanta, Ga.
Austin Bros. Bridge Co., Atlanta, Ga.
Carnegie Steel Co., Pittsburgh, Pa.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.

RIVER & HARBOR IMPROVE-MENTS (Dredging, Docks, Wharves, etc.) Arundel Corp., Baltimore, Md. Atlantic Gulf and Pacific Co., New York.

ROAD and Street Machinery.

Austin-Western Road Machinery Co.,
Chicago, III.
Buffalo-Springfield Roller Co., Springfield, O.
Caterpillar Tractor Co., Peoria, III.
Galion Iron Wks. & Mfg. Co., Galion, O. —and Street Material.

Boxley & Co., W. W., Roanoke, Va.

Koppers Products Co., Pittsburgh, Pa.

Woodstock Slag Corp., Birmingham, Ala.

— Graders and Scrapers.

Austin-Western Road Machinery Co., Chicago, Ill.

Caterpillar Tractor Co., Peoris, Ill.

Galion Iron Wks. & Mfg. Co., Galion, O. —Olls and Preservatives.
Gulf Refining Co., Pittsburgh, Pa

Rollers (Steam and Gasoline.) stin-Western Road Machinery Co., hicago, Ill. Talo-Springfield Roller Co., Spring-

Scarifiers.
Austin-Western Road Mchry. Co., Chicago, Ill. Buffalo-Springfield Roller Co., Spring-

ROOFING (Asphalt Built-Up.)
Barber Asphalt Co., Philadelphia, Pa.
——(Ready Prepared, Felt, Tar
Asbestos, Asphalt.)
Ruberoid Co., New York City.

ROOFING and Siding (Composition.) Ruberoid Co., New York City.

——(Metal.)

American Rolling Mill Co., Middletown, O.

American Sheet and Tin Plate Co., Pitta-burgh, Ps.

Guif States Steel Co., Birmingham, Ala.

Youngstown heet and Tube Co., Youngs-town, O.

SAFES. York Safe & Lock Co., York, Penna.

SAND. Arundel Corp., Baltimore, Md. Friend & Co., Inc., Petersburg, Va. Georgia Sand & Gravel Co., Augusta, Ga.

SANITARY Drinking Fountains, Rundle-Spence Mfg. Co., Milwaukee, Wh.

SAWMILL Machinery, Schofield's Sons Co., J. S., Macon, Ga.

SAWS (Cold Metal.)
Earle Gear and Machine Co., Phila., Pa

SCALES (Auto Truck.)
Fairbanks, Morse & Co., Chicago, Ill.

SCRAP IRON AND STEEL. Smith & Co., W. M., Birmingham, Ala.

SCREEN CLOTH. Seneca Wire & Mfg. Co., Fostoria, Ohia

SCREENING (For Concrete and Road Construction.) American Limestone Co., Knoxville, Tenn.

SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)
Chicago Perforating Co., Chicago, Ill.
Erdle Perforating Co., Rochester, N. Y.
Gruendler Crusher & Pulverizer Co., St.
Louis, Mo.
Hendrick Mfg. Co., Carbondale, Pa.
Mundt & Sons, Charles, Jersey City, N.J.

SCREW-Machine Products.
Progressive Mfg. Co., Torrington, Conn.

SEAWALLS. Shore-Line Builders, Inc., Jacksonville, Fig.

SEWAGE Disposal Systems. D-N Corporation, Winston-Salem, N. C.

SEWER Joint Compounds. Leadite Co., Philadelphia, Pa.

—Pipe (Vitrified.)
Bannon Pipe Co., Louisville, Ky.
Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.

SEWER Pipe Machinery. Quian Wire & Iron Works, Boone, Iona

SHAFTING Material (Tubular.) National Tube Co., Pittsburgh, Pa.

SHARPENING Stones. Carborundum Co., Niagara Falls, N. Y.

SHEET Steel and Iron.
American Sheet and Tin Plate Co., Pitter American Sheet and American Sheet land burgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Guif States Steel Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co.,
Birmingham, Ala.
Youngstown Sheet & Tube Co., Young-

—Metal Working Machinery.

Bertsch & Co., Cambridge City, Ind.

Whitney Metal Tool Co., Rockford, Ill.

SHEETS (Asbestos.) Ruberold Co., New York City.

—(Galvanized and Black.)

American Rolling Mill Co., Middletown.

American Sheet & Tin Plate Co., Pittsburgh, Pa.

SHINGLES (Asbestos.)
Ruberoid Co., New York City.

SHIPBUILDING.
Charleston Dry Dock & Machine Ca.,
Charleston, S. C.

SHOVELS (Steam, Gas and Electric Power.)
Austin-Western Road Machinery Ca. Chicago. III.
Bucyrus-Erle Co., So. Milwaukee, Wit.
National Equipment Corp. (Koehrig).
Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.

SILICATE OF SODA.
Grasselli Chemical Co., Inc., Birmingham.

SITES (Manufacturing.)
Appalachian Electric Power Co., Boanoite, Appalachian Electric 1 Co., Cordele, Ga. Crisp County Power Co., Cordele, Ga. Galveston, Texas, City of. Winston-Salem. Industrial Commission, Industrial N. C. Missouri Pacific R. R., St. Louis, Me. Model Land Company (Flagter System), St. Augustine, Fla. Norfolk & Western Railway, Roanoke, Vs.

York, Penna.

rers Record

g Fountains. Milwaukee, Wls. y. ., Macon, Ga.

Co., Phila., Pa.

STEEL.

Fostoria, Ohia

Cnoxville, Tenn. ravel, Stone,

dale, Pa. rsey City, N.J.

cksonville, Fia. stems. unds.

Ky. parfield, Ky. Owensboro, Ky.

Tubular.)

falls, N. Y. n. te Co., Pitts-

chinery. ckford, Ill.

Middletown Co., Pitts-

fachine Co., ry Co., Chi-

icago, Ill. Ohio.

Birmingham o., Roanoke, ele, Ga.

ston-Salem. oanoke, Va.

melds Bros. Lbr. Co., Albany, Ga. board Public Service Co., Alexandria, Va. Power & Light Co., Dallas, Texas.

SLAG, For Concrete. (Furnace.)

SLINGS (Wire Rope.)
American Steel & Wire Co., Chicago, Ill.
Reeling's Sons Co., John A., Trenton,
N. J.

SLUICE GATES AND APPLI-ANCES. Smith Co., S. Morgan, York, Pa.

SPEED REDUCERS. Barle Gear & Mach. Co., Phila., Pa.

SPIKES (Railroad, Ship.)
Bethlehem Steel Co., Bethlehem, Pa.
Sweet's Steel Co., Williamsport, Pa.

SPRINGS (Machinery, Railway, Spiral Steel.) American Steel & Wire Co., Balto., Md. -(Wire-All Kinds.)
American Steel & Wire Co., Balto., Md.

SPRINKLERS (Automatic Fire.)
Moore Pipe & Sprinkler Co., Jacksonville, Fis.

STACKS (Iron and Steel.)

Birningham Boiler and Engineering Co.,

Birningham, Als.,

Castinooga Boiler & Tank Co., Chatta
moga, Tenn.

Clean Bridge & Iron Wes. Right have noga, Tenn. Chicago Bridge & Iron Wka., Birmingham. Hedges Walsh Weidner Co., Chattanooga. Ingalis Iron Works Co., Birmingham, Ala. Pitaburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
U. S. Pipe & Foundry Co., Burlington,
N. J.
Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.) Cabet, Inc., Samuel, Boston, Mass.

STAIR TREADS. Central Iron & Steel Co., Harrisburg, Pa

STANDPIPES. Chattanooga Boiler & Tank Co., Chatta-Chattanooga Boiler & Tank Co., Chatta-nooga, Tenn. Chicago Bridge & Iron Wks., Birmingham. Pittaburgh-Des Moines Steel Co., Pitts-burgh, Pa.

STATIONERS (Envelopes, Letter and Billheads, etc.) Smith & Son Co., Oscar T., Balto., Md. Young & Seiden Co., Baltimore, Md.

STEAM (Specialties.) Lunkenheimer Co., The, Cincinnati, O. Mueller Co., Decatur, Ill.

STEEL.

American Rolling Mill Co., Middletown, O. Bethlehem Steel Co., Eethlehem, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Temessee Coal, Iron & Baliroad Co.,
Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Cold Rolled.) American Steel & Wire Co., Balto., Md.

—(Fabricators.)
United Welding Co., Middletown, O. —(Tool, High Speed.)
Bethlehem Steel Co., Bethlehem, Pa

STEEL Buildings (Designers and Builders.)
merican Bridge Co., Pittsburgh, Pa.
elmont Iron Works, Philadelphia, Pa.
taolina Steel & Iron Co., Greensbor N. C. Ingalls Iron Works Co., Birmingham, Ala. McClintic-Marshall Corp., Bethlehem, Pa. Pittsburgh-Des Moines Steel Co, Pitts-hyreh. burgh, Pa. Virginia Bridge & Iron Co., Roaneke, Va.

—Plate Construction (Riveted or Welded.) Imingham Boiler & Engr. Co., Bir-mingham, Ala. Iraningham Tank Co., Birmingham. Istol Steel & Iron Works, Inc., Bris-tol, Va. ristol Steel & Iron Works, Inc., 1971s-tol, Va. urolina Steel & Iron Co., Greensboro, N. C.
N. C.
N. C.
Central Iron & Steel Co., Harrisburg, Pa.
Central Iron & Tank Co., Chatta-

Chattanoga Boller & Tank Co., Chatta-noga, Tenn.
Cliego Bridge & Iron Wks., Birmingham.
Hedges Walsh Weidner Co., Chattanoga.
Ingalls Iron Works Co., Birmingham. Als.
McClintic-Marshall Corp., Bethlehem, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa. ld's Sons Co., J. S., Macon, Ga. Welding Co., Middletown, O

STOKERS (Mechanical.) Alabama Stoker & Boiler Co., Birmingham, Ala.

Babcock & Wilcox Co., The, New York.

Detroit Stoker Company, Detroit, Mich.

STORAGE.
General Warehouse & Storage Co., Atlanta, Ga.

STRUCTURAL STEEL AND

1KON.
American Bridge Co., Pittsburgh, Pa.
Austin Bros. Bridge Co., Atlanta, Ga.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol. Va. tol, Va.
Carnegie Steel Co., Pittsburgh, Pa.
Carolina Steel & Iron Co., Greensboro,
N. C.
Chattanooga Boller & Tank Co., Chatta-Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Dietrich Brothers, Baltimore, Md.
Ingalis Iron Works Co., Birmingham, Ala.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Roanoke Iron & Bridge Works, Inc.,
Roanoke, Va.
Snead Architectural Iron Works, Louisville, Ky.
Tennessee Coal, Iron & Railroad Co.,
Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

SULPHATE OF ALUMINA.
Grasselli Chemical Co., Inc., Birmingham.

SULPHIDE OF SODA.
Grasselli Chemical Co., Inc., Birmingham.

SULPHURIC ACID.

Du Pont de Nemours & Co., Inc., E. I.,
Wilmington, Del.

SUPER-HEATERS (Steam.)
Babcock & Wilcox Co., The, New York.

SURFACING (Roads and Streets) Culbert & Sons, W. F., Marlon, Va. Koppers Products Co., Pittsburgh, Pa.

SURVEYS (Industrial.)
Technical Service Co., New York, N. Y. ——(Quantity.)
Martin, Joe B., Washington, D. C.
Spring, Charles Herbert, Greensboro, N. C.

SURVEYING INSTRUMENTS. Weber Co., Inc., F., Philadelphia, Pa.

SWINGING ENGINES.
Dake Engine Co., Grand Haven, Mich.

SWITCHBOARDS, SWITCHES, TRAMWAYS (Aerial Wire General Electric Co., Schenectady, N. Y.

SYSTEMS (Business.) Ersnt & Ernst, New York, N. Y.

TANKS (Air Compressor.)
Titusville Iron Works Co., Titusville, Pa. Caldwell Co., Inc., W. E., Louisville, Ky. Chattanooga Boiler & Tank Co. Chatta-nooga, Tenn. nooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
Cole Mfg. Co., R. D., Newnan, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schoffeld's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.

Virginia Bridge & Iron Co., Roanoke, Va.
—(Elevated Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
—(Iron and Steel.)

American Bridge Co., Pittsburgh, Pa.
Birmingham Tank Co., Birmingham, Als.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Whs., Birmingham.
Cole Mfg. Co., R. D., Newnan, Ga.
McClintic-Marshall Corp., Bethilehem, P.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Bridge & Iron Co., Titusville, Pa.
Virginia Bridge & Iron Co., Titusville, Pa.
Westinghouse Traction Brake Co., Wilmerding, Pa.

--- (Seamless Steel.)
National Tube Co., Pittsburgh, Pa. National Tube Co., Pittsburgh, Pa.

— (Storage, Oil, etc.)
Biggs Bolier Works, Akron, Ohlo.
Birmingham Boiler & Engr. Co., Birmingham Boiler & Engr. Co., Chattanooga, Tenn.
Chattanooga Boller & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham, Ingalis Iron Works Co., Birmingham, Ala.
Pittsburgh-Des Molnes Steel Co., Pittsburgh-Pa.
Titusville Iron Works Co., Titusville, Pa.
United Welding Co., Middletown, O.

— (Wood.)

— (Wood.)
Caldwell Co., Inc., W. E., Louisrille, Ky.
Davis & Son, G. M., Palatka, Fla.
Virginia Mchy. & Well Co., Richmond.

TARPAULINS.
Atlanta Tent & Awning Co., East Point, Ga.
Fulton Bag & Cotton Mills, Atlanta, Ga.

(Non-Corrosive Liquids.)

La Bour Co., Elkhart, Ind.

TAX SPECIALISTS.
Ernst & Ernst, New York, N. Y.

TELEPHONE SERVICE.
American Telephone & Telegraph Co.

TENTS. Fulton Bag & Cotton Mills, Atlanta, Ga.

TEXTILE CHEMICALS.
Grasselli Chemical Co., Inc., Birmingham

TILE. (Floor.) Hood Co., B. Mifflin, Daisy, Tenn. ---(Roof.) Hood Co., B. Mifflin, Daisy, Tenn. — (Sewer.) Lee Clay Products Co., Clearfield Ky.

TIN AND TERNE PLATES.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

TOOLS and DIES.
Gerding Bros., Cincinnati, O.

TOWERS (Electric Transmis-American Bridge Co., Pittsburgh, Pa. Bessemer Galvanizing Works, Birming-ham, Ala.

——(Radio.)
Bessemer Galvanizing Works, Birming-ham, Ala.

— (Steel and Wood.)
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mig. Co., B. D., Newnan, Ga.

TRACK (Portable or Permanent.) Equipment Corp. of America, Chicago, Ill Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.)
Caterpillar Tractor Co., Peoria, Ili.
International Harvester Co. of America,
Inc., Chicago, Ill. ---(Road.)
Caterpillar Tractor Co., Peoria, Ill.

TRAILERS (Arch-Girder, Heavy Duty.) Wellman Engr. Co., Cleveland, O.

—Motor Truck.
Steel Products Co., Savannah, Ga. TRAMRAIL SYSTEMS (Hand or Electric.)
Cleveland Crane & Engr. Co., Wickliffe, O.

Rope.)
American Steel & Wire Co., Balto., Md. TRANSFORMERS.
General Electric Co., Schenectady, N. Y.

—(Used.)
Electric Service Co., Cincinnati, O TRANSMISSION TOWERS

(Galvanized.) McClintic-Marshall Corp., Bethlehem. Pa. TRENCH MACHINERY. See

Excavators (Trench.) TRI-SODIUM PHOSPHATE.
Grasselli Chemical Co., Inc., Birmingham.

TRUCKS (Motor.)
,International Harvester Co. of America,
Inc., Chicago, Ill.

TUBES (Boiler.) See Boiler

TUBING (Seamless Steel.)
National Tube Co., Pittsburgh, Pa

TURBINES (Hydraulic.) Smith Co., S. Morgan, York, Pa. — (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis-DeLaval Steam Turbine Co., Trenton, N.J. General Electric Co., Schenectady, N. Y.

TURNTABLES. American Bridge Co., Pittsburgh, Pa. Virginia Bridge & Iron Co., Roanoke, Va.

UNIONS.
Dart Mfg. Co., E. M., Providence, R. I.

VALVES.
La Bour Co., Elkhart, Ind.
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Mueller Co., Decatur, Ill.
Westinghouse Traction Brake Co., Wilmerding, Pa.

— (Acid Proof.)
Lunkenheimer Co., The, Cincinnati, Ohio.
— (Corrosive Liquids.)
La Bour Co., Elkhart, Ind.

— (Gate.)
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkenheimer Co., The, Cincinnati, Ohio.
Wood & Co., B. D., Philadelphia, Pa.

VAULTS (Bank and Safe Deposit.) York Safe & Lock Co., York, Penna.

WAGONS (Crawlers.) Austin-Western Road Mehry. Co., Chicage, III.

WARDROBES (Hygienic, School.) Wilson Corp., The J. G., New York.

WAREHOUSING.
General Warehouse & Storage Co., Atlanta, Ga.

WATER HEATERS. Finnigan Co., Inc., J., Atlanta, Ga.

WATER Purification.
Bacharach & Co., E. W., Kansas City.
International Filter Co., Chicago, Ill.
Roberts Filter Mfg. Co., Darby (Phils.)
Pa.

-Softening Apparatus (Purifying.)
American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.

-Works Supplies and Appliances, ast Iron Pipe Research Asso., Chicage, lamorgan Pipe & Fdry. Co., Lynchburg. Va.

Va.
Layne & Bowler, Inc., Memphis, Tenn.
Leadite Co., Philadelphis, Pa.
Mueller Co., Decatur, Ill.
U. S., Pipe & Foundry Co., Burlington,
Va.
Wood & Co., R. D., Philadelphia, Pa.

WELDING. WELDING. Charleston Dry Dock & Machine Co., Charleston, S. C. Hedges-Walsh-Weidner Co., Chattanooga. United Weiding Co., Middletown, O.

WELDING APPARATUS (Electric Arc.)
General Electric Co., Schenectady, N. Y.
Layne & Bowler, Inc., Memphis, Tenn.

WELL CONTRACTORS (Oil, Artesian, etc.)
Layne & Bowler, Memphis Tenn.
Virginia Mchy. & Well Co., Richmond,

WHEELS AND AXLES. Carnegie Steel Co., Pittsburgh, Pa.

WINDOW WASHING EQUIP-MENT (Tramrall.) Cleveland Crane & Engr. Co., Wickliffe, O.

WIRE (All Kinds.)
American Steel & Wire Co., Chicago.
Seneca Wire & Mfg. Co., Fostoria, O.
—(Barbed Wire, etc.)
American Steel & Wire Co., Balto., Md.
Gulf States Steel Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

town. Ohio.

___(Fence.)
Cyclone Fence Co., Waukegan, Ill.
Stewart Iron Works Co., Cincinnati, O. —— (Flat and Round.)

American Steel & Wire Co., Balto., Md.
Roebling's Sons Co., John A., Trenton,
N. J.

— (Galvanized and Annealed.)
Atlantic Steel Co., Atlanta, Ga.
Gulf States Steel Co., Birmingham, Ala.

WIRE Cloth (Iron, Steel, Copper, Brass, etc.)

Harrington & King Perf. Co., Chicago.
Roebling's Sons Co., John A., Trenton,
N. J.

Seneca Wire & Mfg. Co., Fostoria, O. -Goods.
Cyclone Fence Co., Waukegan, Ill.

Cyclone Fence Co., Walkegan, III.

—Rope (Transmission, Hoisting, Haulage.)
American Cable Co., New York City.
American Steel & Wire Co., Chicago, III.
Hazard Wire Rope Co., Wilkes-Barre, Pa.
Roebling's Sons Co., John A., Trenton,

—Stapling.
Seneca Wire & Mfg. Co., Fostoria, O.
—(Telephone and Telegraph.)
American Steel & Wire Co., Balto., Md. — (Welding.)
American Steel & Wire Co., Chicago, Ill.
Roebling's Sons Co., John A., Trenton,
N. J.
Seneca Wire & Mfg. Co., Fostoria, O.

WOOD PRESERVATIVES.

WOODWORK (Cabinet.)
Mitchell Mfg. Co., Robert, Cincinnati, O.

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